



TRANSMITTAL LETTER
(General - Patent Pending)

Docket No.
JEN-0005-Z

In Re Application: CARLINO PANZERA ET AL.

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/460,951	12/14/1999	J. DERRINGTON	23413	1731	3152

Title: METHOD FOR MANUFACTURE OF DENTAL PORCELAIN HAVING SMALL LEUCITE CRYSTALLITES

COMMISSIONER FOR PATENTS:

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Corrected Appeal Brief

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Dated: May 5, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	CARLINO PANZERA ET AL)	Group Art Unit: 1731
SERIAL NUMBER:	09/460,951)	Before the Examiner:
FILED:	December 14, 1999)	Derrington, J.
FOR:	METHOD OF MANUFACTURE)	
	OF DENTAL PORCELAIN)	
	HAVING SMALL LEUCITE)	
	CRYSTALLITES)	

AMENDED APPEAL BRIEF

Commissioner for Patents
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REAL PARTY IN INTEREST

The real party in interest is Jeneric/Pentron, Inc., North Plains Industrial Road, Walligford, CT 06492.

RELATED APPEALS, INTERFERENCES AND JUDICIAL PROCEEDINGS

Appellants are not aware of any related appeals or interferences.

With regard to judicial proceedings, two patents related to the present application were asserted in a civil action for patent infringement entitled: *Jeneric/Pentron, Inc. v. Dillon Company, Inc., et al*, Civil Action No. 3:98-818(EBB), 3:99-1775(EBB), originally filed in the United States District Court for the District of Connecticut on May 1, 1998. (Civil Action No. 3:98-818(EBB) was filed on May 1, 1998 and Civil Action No. 3:99-1775(EBB) was filed on September 9, 1999 and the two cases were consolidated). The judicial proceeding terminated on December 10, 2003.

The patent originally asserted was U.S. Patent No. 5,653,791 (“the ‘791 patent”), filed in March 12, 1996 as U.S. Application Serial No. 08/614,044. U.S. Patent No. 5,944,884 (“the ‘884 patent”) was subsequently asserted (in Civil Action No. 3:99-1775(EBB)) shortly after it issued on August 31, 1999. The present application and the ‘884 patent are continuations of U.S. Application Serial No. 08/870,965, which is a divisional of U.S. Application Serial No. 08/614,044, now the ‘791 patent.

The following decisions were rendered during the course of the judicial proceeding (see attached Related Proceedings Appendix):

1. RULING ON MOTION FOR PRELIMINARY INJUNCTION (D. Conn. February 3, 1999);

2. APPELLATE DECISION AFFIRMING RULING ON MOTION FOR PRELIMINARY INJUNCTION (Fed. Cir., March 20, 2000);
3. DECISION ON CROSS-MOTIONS FOR SUMMARY JUDGMENT (D. Conn., August 29, 2001);
4. FINDINGS OF FACT AND CONCLUSIONS OF LAW ON CHARGE OF INEQUITABLE CONDUCT (D. Conn., August 7, 2002);
5. RULING ON PLAINTIFF'S MOTION FOR JUDGMENT AS A MATTER OF LAW, OR, IN THE ALTERNATIVE, FOR A NEW TRIAL WITH RESPECT TO WHETHER LF-PFM WAS IN PUBLIC USE PRIOR TO MARCH 12, 1995 (D. Conn., August 21, 2002);
6. RULING ON DEFENDANTS' MOTION FOR JUDGMENT AS A MATTER OF LAW (D. Conn., August 22, 2002).
7. RULING ON PLAINTIFF'S RENEWED MOTION FOR A NEW TRIAL ON THE PUBLIC USE DEFENSE AND MOTION FOR SANCTIONS (D. Conn., February 27, 2003); and
8. RULING ON PLAINTIFF'S MOTION FOR PERMANENT INJUNCTION (D. Conn., April 15, 2003).

During the judicial proceedings, the defendants asserted invalidity of the claims of the '791 patent and '844 patent under 35 U.S.C. § 102(b) due to alleged anticipation by (1) U.S. Patent No. 4,604,366 ("the '366 patent") and by (2) defendant Chemichl AG's product known as LF-1-PFM (also referred to as LF-PFM) which was allegedly on sale or in public-use in the United States more than one year prior to the application date of the patents-in-suit. *See e.g.*, 171 F.Supp.2d 49, 56-7 (D. Conn., August 29, 2001) (DECISION ON CROSS-MOTIONS FOR SUMMARY JUDGMENT) (see attached Related Proceedings Appendix).

Appellant does not believe that the judicial proceeding will directly affect or have a bearing on the Board's decision in the pending appeal because neither of the grounds alleged for patent invalidity in the judicial proceeding have been cited by the examiner in

this case. Of course, the judicial proceeding and the arguments for patent invalidity addressed therein have been disclosed to the examiner pursuant to the applicant's duty of candor. Appellant brings the judicial proceeding to the Board's attention only because of the related nature of the patents involved to the present application. A brief summary of the results of the civil proceeding are provided below.

The civil action proceeded to a jury trial in May of 2002. On May 24, 2002, the jury returned its verdict, in which it concluded, *inter alia*, (1) that the '791 patent and '844 patent were not anticipated by the '399 patent, and (2) that the '791 patent and '844 patent were anticipated by the alleged public use of LF-PFM. *See RULING ON PLAINTIFF'S RENEWED MOTION FOR A NEW TRIAL ON THE PUBLIC USE DEFENSE AND MOTION FOR SANCTIONS* (D. Conn., February 27, 2003), p. 3.

The jury's verdict of anticipation based on the alleged public use of LF-PFM was eventually overturned by the District Court because of evidence that had improperly been withheld by the defendants during the discovery period leading up to trial. (*Id.*) In particular, the defendants improperly withheld a number of scanning electron micrographs (SEMs) of the LF-PFM product that were taken prior to the critical date of the patents-in-suit, and a number of laboratory notebooks relating to the development of LF-PFM. (*Id. see also id.*, at 12-13.).

In its *RULING ON PLAINTIFF'S RENEWED MOTION FOR A NEW TRIAL ON THE PUBLIC USE DEFENSE AND MOTION FOR SANCTIONS*, the Court found that improperly withheld evidence would have changed the outcome at trial in plaintiff's favor. (*Id.*, at 15-18). Accordingly, the jury's finding of anticipation of the '791 patent and '844 patent was overturned. (*Id.*).

STATUS OF CLAIMS

Claims 1-7 remain pending in the present application. Claims 1-7 were finally rejected in a Final Office Action issued on July 19, 2004 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,698,019 to Frank or German Patent 1441336 in view of Chemical Abstracts 120 (M.Y. Shareef et al). A clean copy of claims 1-7 are attached hereto as Appendix 1.

Appellants appeal from the final rejection of claims 1-7.

STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The following is a concise explanation of the invention defined in the claims. This summary does not limit the claims.

The pending claims are directed to a dental porcelain composition for dental porcelain restorations, as well as inlays, onlays and veneers. [Application, p. 1, ll. 7-8]. The porcelain composition comprises two phases, a leucite crystallite phase and a feldspathic glass matrix phase. [Application, p. 4, ll. 7-9]. The leucite crystallites are present in an amount ranging from about 5 to about 65 weight percent based on the weight of the entire composition. The leucite crystallites present in the composition possess diameters not exceeding about 10 microns, preferably not exceeding about 5 microns, more preferably not exceeding about 1 micron. [Application, p. 6, ll. 11-15].

The porcelain composition has a maturing temperature of from about 650° C to about 1050° C and a coefficient of thermal expansion (room temperature to 450° C) of from about

$12 \times 10^{-6}/^{\circ}\text{C}$ to about $17.5 \times 10^{-6}/^{\circ}\text{C}$. [Application, p. 4, ll. 10-12]. The porcelain composition comprises the following:

<u>Component</u>	<u>Amount (wt.%)</u>
SiO ₂	57-66
Al ₂ O ₃	7-15
K ₂ O	7-15
Na ₂ O	7-12
Li ₂ O	0.5-3
CaO	0-3
MgO	0-7
F	0-4
CeO ₂	0-1

It is essential to the practice of the present invention that the leucite crystallites not exceed about 10 microns in diameter. [Application, p. 4, ll. 26-27]. Diameters in excess of about 10 microns will impart an undesirably rough and uneven surface to the composition when employed in its intended environment of use. [Application, p. 5, ll. 1-2]. Indeed, it has been determined that leucite diameters above about 10 microns may wear away local dentition and cause discomfort/irritation inside the oral cavity. [Application, p. 5, ll. 3-4].

In one embodiment of the present invention, the two-phase dental porcelain composition is derived from a blend of a first porcelain component possessing a low fusing temperature and a moderately high coefficient of thermal expansion, with a second porcelain component possessing a high coefficient of thermal expansion and containing a dispersed crystalline leucite phase wherein the leucite crystallites are less than about 10 microns in diameter. [Application, p. 6, ll. 16-22].

The small crystal size can be achieved by mixing the second porcelain component in powder form, such as powder sufficiently fine to pass through a 200 mesh screen (Tyler series), with water in a suitable vessel, allowing the mixture to settle, decanting and retaining the supernatant liquid, mixing the retained supernatant liquid with water in a suitable vessel, allowing the mixture to settle a second time, decanting and retaining the supernatant liquid, evaporating the water of the retained supernatant liquid to provide dried powder and screening the dried powder through 325 (or greater) mesh screen (Tyler series) to break up any agglomerates. [Application, p. 9, ll. 5-19]. By virtue of the foregoing treatment, leucite crystallites possessing diameters not exceeding about 10 microns will be separated and isolated from the second porcelain component. [Id].

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7 were rejected on the grounds that they are unpatentable as obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 5,698,019 to Frank or German Patent 1441336 in view of Chemical Abstracts 120 (M.Y. Shareef et al).

ARGUMENT

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) over Frank or German Patent 1441336 in view of Shareef et al. Appellants request reversal of this rejection.

Frank and Germany 1441336 teach dental restoration materials comprising a leucite crystalline phase for use in preparing crowns, bridges and the like. However, Frank and Germany 1441336 do not teach the use of leucite crystals not exceeding about 10 microns in diameter. Germany 1441336 says nothing of crystal size and Frank teaches leucite crystals having an average size of less than 3 microns. Of course, an average crystal size of less than 3 microns indicates that crystals of greater than about 10 microns may be present in the

composition. Shareef et al does not teach the use of crystal sizes not exceeding about 10 microns. Rather, Shareef teaches that leucite crystals having a more uniform distribution and finer size may provide higher flexural strength and less microcracking. The Examiner concluded that the teaching of Shareef provided an “incentive to use the instant crystallite particle size with the process of Frank et al (or Germany 1441336) in order to achieve the benefits disclosed by Shareef et al. [See Office Action, 1/13/03]. Respectfully, the Examiner’s rejection is improper and should be reversed.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a *prima facie* case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

In making the rejections over Frank in view of Shareef et al, the Examiner stated that Frank discloses a material with components that overlap the claimed components. [See Office Action, 1-13-03, p. 2]. Second, the Examiner states that, due to this overlap, the claimed maturing temperatures and coefficients of thermal expansion would be inherent in the materials of Frank. [Id]. Third, the Examiner states that Applicant’s claims regarding leucite crystals “not exceeding 10 microns” is rendered obvious by Frank in view of Shareef et al because Frank discloses an average crystal size of 3 microns and, in addition, teaches “that it is advantageous for mechanical strength if ‘all the crystals of the individual phases are essentially of the same size.’” [Id]. Further, the Examiner states that Shareef et al teaches that leucite crystals having a more uniform distribution and a finer size provide higher flexural strength and less microcracking, thus providing incentive to use the particle size disclosed in the process of Frank in order to achieve the benefits disclosed in Shareef et

al. [Id., p.3]. Similarly, the Examiner stated that Germany 1441336 discloses Applicant's claimed dental porcelain "with the exception of the claimed limitation 'diameters not exceeding about 10 microns.'" [Id]. The Examiner further stated that Shareef et al teaches that "leucite crystals having a more uniform distribution and finer size" are desirable. [Id].

The Examiner's obviousness rejections should be reversed because none of the references relied on render obvious all elements of Applicant's claims. *See In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970) (Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art). None of the cited references, either alone or in combination, disclose or suggest leucite crystals not exceeding about 10 microns to one of skill in the art. By definition, the average crystal size disclosed in Frank allows for crystal sizes without an upper limit and, therefore, may include crystals of greater than about 10 microns in diameter. In the Final Office Action, the Examiner stated that it "does not appear to be true" that Frank does not disclose an absolute crystal size of less than 10 microns. [Final Office Action, p. 2]. However, the Examiner did not provide a basis for this conclusion. Contrary to the Examiner's remark, Frank explicitly states that the crystal size is an "average." [See Frank, col. 2, ll. 62-67; claims 5,7].

Further, Frank's statement that the crystals "are essentially of the same size" does not preclude the presence of some crystals over 10 microns. To the contrary, the statement inherently allows for the presence of some crystals outside of the desired size range. This is a critical difference between Frank and the present Application because the present Application does not permit any crystals over 10 microns.

Moreover, the cited references cannot render obvious Applicant's claims to an absolute crystal size of less than 10 microns because they provide no teaching to one of skill

in the art how to obtain an absolute crystal size of less than 10 microns. In contrast, the present Application provides detailed teaching on how to obtain an absolute crystal size of less than 10 microns. For example, the Application teaches the following:

In accordance with the practice of the present invention, the second porcelain component, prior to being combined or blended with the first porcelain component, is treated to separate and isolate leucite crystallites possessing diameters not exceeding about 10 microns. Leucite crystallized possessing diameters not exceeding about 10 microns will impart extremely smooth surfaces to dental restorations produced with the porcelain composition of this invention. The second porcelain component can be treated by mixing the second porcelain component in powder form, such as powder sufficiently fine to pass through a 200 mesh screen (Tyler series), with water in a suitable vessel, allowing the mixture to settle, decanting and retaining the supernatant liquid, mixing the retained supernatant liquid with water in a suitable vessel, allowing the mixture to settle a second time, decanting and retaining the supernatant liquid, evaporating the water of the retained supernatant liquid to provide dried powder and screening the dried powder through 325 (or greater) mesh screen (Tyler series) to break up any agglomerates. By virtue of the foregoing treatment, leucite crystallites possessing diameters not exceeding about 10 microns will be separated and isolated from the second porcelain component.

[Application, p. 9, ll. 5-22].

“In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method.” *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed.Cir.1989) (emphasis added). Thus, because the cited references are non-enabling as to an absolute crystal size of less than 10 microns, the Applicant’s claims are not rendered obvious.

The Examiner disregarded Applicant’s argument regarding enablement on the grounds that it would render Frank invalid. [See Final Office Action, p. 2]. Respectfully, the Examiner misinterpreted Applicant’s argument regarding enablement because Applicant did not argue that the specification of Frank does not enable Frank’s claims. Rather, Applicant

argued that Frank does not enable Applicant's claims. Clearly, the difference is critical because Frank would not be rendered invalid for failing to enable Applicant's claims.

As discussed above, neither Frank, Germany 1441336, nor Shariff et al provides any teaching as to how to eliminate all crystals larger than about 10 microns. In other words, a person of skill in the art practicing any of the cited references would make a glass-ceramic having an average crystal size of less than 5 or 3 microns, but also containing some crystals larger than about 10 microns. Thus, the Applicant's pending claims are not rendered obvious.

In addition, the Examiner has stated that the remarks at the bottom of page 9 of the Application, regarding knowledge of one of skill in the art, render Applicant's arguments regarding enablement unpersuasive. [Final Office Action, p.3]. Specifically, the Examiner stated that "applicant states that one of ordinary skill knows how to isolate the small diameter particles." Respectfully, the Examiner has misinterpreted the remarks at page 9 of the Application. At page 9, lines 5-17, the application provides a detailed description of the preferred method for separating crystals larger than about 10 microns from the porcelain. Next, at lines 16-22, Applicant makes the following statement:

By virtue of the foregoing treatment, leucite crystallites possessing diameters not exceeding about 10 microns will be separated and isolated from the second porcelain component. It will be understood by those skilled in the art that variations of the foregoing treatment method or other treatment methods or combinations thereof such as jet milling, air classification, floatation, etc. can be employed herein to separate and isolate the small diameter leucite crystallites.

[Application, p. 9, ll. 16-22].

When read in proper context, it is clear that the above statement is meant to convey that, in light of the detailed disclosure of the preferred method immediately preceding it,

persons of skill in the art will now understand certain variations of the method and other methods that may be used to separate out all crystals larger than 10 microns. Previously, no such methods were disclosed in the prior art.

Thus, it has been shown that neither Frank nor Germany 1441336 in view of Shareef et al, disclose or teach leucite crystals less than 10 micron diameter, an element of independent claim 1, and therefore cannot render claim 1 obvious. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, dependent Claims 2-7 are nonobvious as well.

CONCLUSION

In view of the foregoing, Appellant requests that the rejection of claims 1-7 under 35 U.S.C. § 103(a) be reversed.

If there are any additional charges with respect to this Appeal Brief or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Appellant's Attorneys.

Respectfully submitted,

Carlino Panzera et al.

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CLAIMS APPENDIX

CLAIM 1. A method of fabricating a dental restoration comprising:
providing a framework possessing a coefficient of thermal expansion of as high as about $18 \times 10^{-6}/^{\circ}\text{C}$; and

fusing a dental porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix to said framework to provide a smooth, non-abrasive surface thereon;

said fused dental porcelain composition having a maturing temperature in the range from about 750° to about 1050° C., a coefficient of thermal expansion (room temperature to 450° C.) of from about $12 \times 10^{-6}/^{\circ}\text{C}$. to about $17.5 \times 10^{-6}/^{\circ}\text{C}$., and comprising:

Component	Amount (wt. %)
SiO_2	57-66
Al_2O_3	7-15
K_2O	7-15
Na_2O	7-12
Li_2O	0.5-3

and further comprising a dispersed leucite crystallite phase representing from about 5 to about 65 weight percent of the dental porcelain, and wherein the leucite crystallites possess diameters not exceeding about 10 microns.

CLAIM 2. The method of Claim 1 wherein the leucite crystallites of the fused porcelain have diameters not exceeding about 5 microns.

CLAIM 3. The method of Claim 2 wherein the leucite crystallite are less than have diameters not exceeding about 1 micron.

CLAIM 4. The method of Claim 1, wherein the dental porcelain has a maturing temperature of from about 800° to about 1000°C.

CLAIM 5. The method of Claim 1, wherein the dental porcelain is fired at a temperature ranging from about 780° to about 870°C.

CLAIM 6. The method of claim 1, wherein the fused porcelain is a two-phase porcelain.

CLAIM 7. The method of Claim 1 wherein the fused dental porcelain composition further comprises at least one of:

Component	Amount (wt. %)
CaO	0-3
MgO	0-7
F	0-4
CeO ₂	0-1.

EVIDENCE APPENDIX

Evidence submitted pursuant to 37 CFR §§ 1.130, 1.131, or 1.132 or other evidence entered by examiner and relied upon by appellant:

None, other than cited references and materials presented below in the Related Proceeding Appendix.

RELATED PROCEEDINGS APPENDIX

The following decisions are attached hereto:

1. RULING ON MOTION FOR PRELIMINARY INJUNCTION (D. Conn. February 3, 1999);
2. APPELLATE DECISION AFFIRMING RULING ON MOTION FOR PRELIMINARY INJUNCTION (Fed. Cir., March 20, 2000);
3. DECISION ON CROSS-MOTIONS FOR SUMMARY JUDGMENT (D. Conn., August 29, 2001);
4. FINDINGS OF FACT AND CONCLUSIONS OF LAW ON CHARGE OF INEQUITABLE CONDUCT (D. Conn., August 7, 2002);
5. RULING ON PLAINTIFF'S MOTION FOR JUDGMENT AS A MATTER OF LAW, OR, IN THE ALTERNATIVE, FOR A NEW TRIAL WITH RESPECT TO WHETHER LF-PFM WAS IN PUBLIC USE PRIOR TO MARCH 12, 1995 (D. Conn., August 21, 2002);
6. RULING ON DEFENDANTS' MOTION FOR JUDGMENT AS A MATTER OF LAW (D. Conn., August 22, 2002).
7. RULING ON PLAINTIFF'S RENEWED MOTION FOR A NEW TRIAL ON THE PUBLIC USE DEFENSE AND MOTION FOR SANCTIONS (D. Conn., February 27, 2003); and
8. RULING ON PLAINTIFF'S MOTION FOR PERMANENT INJUNCTION (D. Conn., April 15, 2003).

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Motions, Pleadings and Filings

Only the Westlaw citation is currently available.

United States District Court, D. Connecticut.
JENERIC/PENTRON, INC., Plaintiff,
v.
DILLON COMPANY, INC. and Chemichl Inc.,
Defendants.
No. 3:98-CV-818 (EBB).

Feb. 3, 1999.

RULING ON MOTION FOR PRELIMINARY INJUNCTION

BURNS, Senior J.

*1 Jeneric/Pentron, Inc. ("Jeneric") brought this patent infringement action against defendants Dillon Company, Inc. ("Dillon") and Chemichl, Inc. ("Chemichl") pursuant to 35 U.S.C. § 271 (1998), alleging that Dillon and Chemichl sell two products that infringe United States Patent No. 5,653,791 entitled "Two-Phase Dental Porcelain Composition" (" '791 patent"). Jeneric seeks an injunction, damages, and attorney's fees as remedies. In turn, Dillon has asserted federal and state counterclaims against Jeneric. This ruling addresses Jeneric's motion for a preliminary injunction, which seeks to enjoin the defendants from making, using, selling, offering to sell, or importing the two accused products into the United States. Pursuant to this motion, the Court held a three-day hearing where the parties presented oral testimony and over 500 exhibits. For the following reasons, Jeneric's motion for a preliminary injunction [Doc. No. 7] is denied.

BACKGROUND

I. Parties and Competing Products

Jeneric manufactures dental materials and related oven equipment, which it markets to dentists and dental technicians for the construction of dental restorations such as inlays, crowns, and bridges. Jeneric is the owner by assignment of the '791 patent. (Assignment of '791 Patent, Ex. 2.) Inventors Carline Panzera and Lisa Kaiser filed the '791 patent application on March 12, 1996, and the United States Patent and Trademark Office issued the patent on August 5, 1997. ('791 Patent, Ex. 1.)

The '791 patent teaches a two-phase porcelain composition, which comprises a leucite crystallite phase disbursed in a glass phase. Porcelain is a type of ceramic material, [FN1] which has a crystalline phase and a glass phase. (Sisson Test.) Ceramics prove useful in dental restorations because they can be colored to resemble teeth and they resist degradation inside the oral cavity. ('791 Patent, Col. 1, Lines 16-21.) According to Jeneric, the critical feature of the '791 patent is that it directs a composition where the leucite crystals in a completed dental restoration must all be smaller than 10 microns. Indeed, the '791 patent provides that it "is essential to the practice of the present invention that leucite crystallites present in the two-phase porcelain composition herein possess diameters not exceeding about 10 microns." ('791 Patent, Col. 2, Lines 48-50.) This has the effect of reducing abrasive wear against natural teeth and discomfort inside the mouth. (*Id.*)

FN1. A ceramic may be described as any inorganic, nonmetallic material found in such things as glass and bricks. (Sisson Test.)

Defendants Dillon, based in Rhode Island, and Chemichl, based in Washington, sell two dental porcelain products used in conjunction with each other that Jeneric accuses of infringing the '791 patent. The first product, known as Cerpress SL ("Cerpress"), constitutes a ceramic pellet used as a

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core or base material in a dental restoration. The second product, known as Sensation SL ("Sensation"), is applied over the Cerpress core to form a complete dental implant. (Exs.3-5.) Dillon and Chemichl import Cerpress and Sensation into the United States from Chemichl's parent company, Chemichl AG of the Country of Liechtenstein. Dillon then resells the two products to dental technicians and dentists for the construction of dental restorations.

*2 Jeneric alleges that Sensation literally infringes claims 1 and 2 of the '791 patent, and that Cerpress infringes claim 1 under the doctrine of equivalents. (Pl.'s Mem.Supp. at 27-28, 33; Pl.'s Hrg Br. at 22.) As relief, Jeneric seeks a preliminary and permanent injunction pursuant to 35 U.S.C. § 283, treble damages pursuant to 35 U.S.C. § 284, and reasonable attorney's fees and costs under 35 U.S.C. § 285. (Pl.'s Am.Compl. at 3.) The defendants respond with the affirmative defenses that Sensation and Cerpress do not infringe any claim of the '791 patent, each claim of the patent is invalid and void, and the patent is unenforceable. (Dillon's Answer Countercl. ¶¶ 8-10.)

In addition, Dillon has asserted the following counterclaims against Jeneric: (1) tortious interference with contractual relations; (2) tortious interference with business relations; (3) a violation of the Connecticut Unfair Trade Practices Act, Conn.Gen.Stat. § 42-110a *et seq.* (1998); and (4) a wrongful attempt to monopolize in violation of Section 2 of the Sherman Antitrust Act, 15 U.S.C. § 2 (1998). (*Id.* ¶¶ 24-35.) In this regard, Dillon seeks a declaratory judgment of noninfringement and that the '791 patent is invalid, treble damages, punitive damages, and attorney's fees and costs. (*Id.* at 5.) Jeneric's answer to the counterclaims argues that Dillon failed to state a claim upon which relief can be granted, the counterclaims are unduly vague, and Dillon is guilty of unclean hands. (Pl.'s Answer Dillon's Countercl. at 3.)

Jeneric's motion for a preliminary injunction is before the Court. In addition, Dillon has filed two separate motions for partial summary judgment. The first motion requests a declaration of

noninfringement and a ruling that claims 1 and 2 of the '791 patent are invalid because they were "anticipated" under 35 U.S.C. § 102(b) by the issuance of United States Patent No. 4,604,366 ("'366 patent") in 1986. The second motion contends that claims 1 and 2 of the '791 patent are invalid because Sensation was "on sale" more than one year prior to the application date under section 102(b).

II. Test Results and Interpretation of Claims

Claims 1 and 2 of the '791 patent state the following:

1. A two-phase porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix, a maturing temperature of from about 750° to about 1050° C. and a coefficient of thermal expansion of from about $12 \times 10^{-6}/^{\circ}\text{C}$. to about $17.5 \times 10^{-6}/^{\circ}\text{C}$. (room temperature to 450° C.), said porcelain composition comprising:

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Component	Amount (wt.%)
SiO ₂	57-66
Al ₂ O ₃	
K ₂ O	
Na ₂ O	
Li ₂ O	0.5-3
CaO	
MgO	
F	
CeO ₂	

wherein the leucite crystallites possess diameters not exceeding about 10 microns and represent from about 5 to about 65 weight percent of the two-phase porcelain composition.

2. The two-phase porcelain composition of claim 1 further comprising at least one component selected from the group consisting of opacifying agent, pigment and fluorescing agent.

*3 ('791 Patent, Col. 6, Claims 1, 2.)

Jeneric's expert witness, Richard D. Sisson, Ph.D., conducted a variety of tests to determine the physical properties of Sensation and Cerpress. Professor Sisson is the Program Head of the Materials Science and Engineering Program at Worcester Polytechnic Institute in Worcester, Massachusetts. The tests conducted on samples of Sensation and Cerpress included: (1) x-ray diffraction and scanning electron microscopy to determine the presence of leucite crystals in the glass matrix; (2) scanning electron microscopy and quantitative image analysis to determine the percent and size of leucite crystals in the glass matrix; (3) wet chemical analysis to calculate the chemical composition of the two products; (4) thermal expansion coefficient measurement to ascertain the respective coefficients of thermal expansion; and (5) quantitative image analysis and digital x-ray maps to identify the amount of cerium oxide ("CeO₂") inside and outside of the two-phase composition.

(Pl.'s Mem.Supp. at 2-3; Exs. 15-51B.) The parties do not dispute the results of Professor Sisson's testing of samples of Sensation and Cerpress. A chart comparing Professor Sisson's test results to claim 1 of the '791 patent is reproduced below:

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CLAIM 1 OF '791 PATENT	SENSATION	CERPRESS
A two-phase porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix,	YES	YES
a maturing temperature of from about 750° to about 1050° C.	YES (760° C: 1st bake) (755° C: 2nd bake)	YES (800° C: entry) (975° C: press)
a coefficient of thermal expansion of from about 12x10 -6/° C. to about 17.5 x10 -6/° C. (room temperature to 450° C.),	YES (13.5x10 -6/° C.)	YES (14% 6816 x10 -6/° C.)
said porcelain composition comprising:		
Component	Amount (wt %)	Amount (wt %)
SiO ₂	57-66	60.5
Al ₂ O ₃	7-15	11.39
K ₂ O	7-15	10.64
Na ₂ O	7-12	11.88
Li ₂ O	0.5-3	.71
CaO	0-3	1.53
MgO	0-7	.017
F	0-4	.081
CeO ₂	0-1	1.61
wherein the leucite crystallites possess diameters not exceeding about 10 microns	YES	YES
and represent from about 5 to about 65 weight percent of the two-phase porcelain composition.	YES (25%-40%)	YES (25%-40%)

(Pl.'s Mem.Supp. at 6-18, 26; Sisson Decl. at 12-17; Defs.' Mem. Opp. at 10- 11.) In addition to the chemical elements comprising Cerpress listed above, tests showed that Cerpress contained 1.02% of Barium Oxide ("BaO") and 1.93% of Boron Oxide ("B₂O₃"). (*Id.*)

Both sides agree that most of the elements of claim

1 read on Sensation and Cerpress. For example, Sensation and Cerpress constitute a two-phase porcelain composition having a leucite crystallite phase dispersed in a glass matrix, with leucite crystal sizes "not exceeding about 10 microns," as provided in claim 1. In addition, the leucite crystals in the two products comprise 25 to 40 weight percent of the two-phase composition, well within

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the range of "from about 5 to about 65 weight percent" established by claim 1. Next, Professor Sisson calculated the coefficients of thermal expansion for Sensation as $13.5 \times 10^{-6}/^{\circ}\text{C}$. and for Cerpress as $14-16 \times 10^{-6}/^{\circ}\text{C}$., clearly within the range of " $12 \times 10^{-6}/^{\circ}\text{C}$. to about $17.5 \times 10^{-6}/^{\circ}\text{C}$." established by claim 1. Finally, the maturing temperatures of Sensation and Cerpress fall within claim 1's range. However, the defendants argue that the chemical compositions of Sensation and Cerpress, as measured in weight percentage, do not fall within the ranges stated in claim 1. Indeed, Professor Sisson's tests revealed that: (1) Sensation contained 1.61% of CeO_2 ; and (2) Cerpress contained 15 .97% of Alumina (" Al_2O_3 ") and .041% of Lithium Oxide (" Li_2O ").

*4 Jeneric contends that Sensation literally infringes claims 1 and 2 of the '791 patent. It acknowledges that Sensation contained 1.61% of CeO_2 , more than the range of 0-1% specified in claim 1. However, Jeneric asserts that claim 2 covers the addition of an "opacifying agent, pigment and fluorescing agent" to the composition of claim 1. ('791 Patent, Col. 6, Claim 2.) The specification of the '791 patent lists CeO_2 as a fluorescing agent. (*Id.*, Col. 5, Lines 45-48.) Professor Sisson's tests showed that of the 1.61% of CeO_2 in Sensation, .92% was present in the glass matrix as an antigreening agent, while .69% was present as a fluorescing agent or additive outside of the two-phase matrix. (Sisson Decl. ¶¶ 20-21; Pl.'s Mem.Supp. ¶ 14.) Jeneric proposes that the .92% of CeO_2 satisfies the range limitation in claim 1, and the .69% of CeO_2 is permitted by claim 2 as a fluorescing agent or additive. (Pl.'s Prop.Find. Fact Concl.Law ¶¶ 54, 58, 163, 164.)

Jeneric also maintains that Cerpress infringes claim 1 of the '791 patent under the doctrine of equivalents. Once again, Jeneric acknowledges that Cerpress contained .041% of Li_2O , less than the 0.5-3% range established by claim 1. However, it states that 1.02% of BaO , 1.95% of B_2O_3 , and sodium oxide (" Na_2O ") have been added as a substitute for the range of Li_2O in claim 1 to perform the same function, in the same manner, and to achieve the same result. (Pl.'s Mem.Supp. ¶¶

16, 18, 20.) Li_2O performs the function of a "flux modifier" in a ceramic material, controlling the viscosity and the fusion temperature or melting point. (Sisson Test.; Panzera Test.) According to Professor Sisson, the elements of Na_2O , BaO , and B_2O_3 found in Cerpress also act as a flux and are well-known substitutes in the art. (Sisson Decl. ¶¶ 8, 24, 26; Pl.'s Prop.Find. Fact Concl.Law ¶¶ 63-65.) Jeneric also acknowledges that Cerpress contains 15.97% of Al_2O_3 , greater than the 7-15% range established by claim 1. However, it explains that "a portion of the Alumina (Al_2O_3) was added as an additive." (Pl.'s Mem.Supp. at 27.) In turn, Professor Sisson states that:

A portion of the Alumina (Al_2O_3) either was added as a substitute for one of the glass modifying or glass forming oxides or resides outside of the two phase glass-leucite matrix and thus this component is within the range of claim 1. The additional Alumina may also have been added to increase the coefficient of thermal expansion of the two phase glass-leucite matrix to counteract the reduction caused by the addition of the Boron Oxide (B_2O_3), and thus this component is within the range and intent of claim 1.

(Sisson Decl. ¶ 25.) Jeneric suggests that at least .97% of the Al_2O_3 in Cerpress exists outside of the two-phase matrix. (Pl.'s Mem.Supp. at 17, 27; Pl.'s Prop.Find. Fact Concl.Law ¶¶ 62, 166.)

STANDARD OF REVIEW FOR PRELIMINARY INJUNCTION

*5 Injunctive relief in patent cases is authorized by 35 U.S.C. § 283. A moving party in a patent infringement suit must establish its right to a preliminary injunction in light of four factors: (1) whether the movant has demonstrated a reasonable likelihood of success on the merits; (2) whether the movant will suffer irreparable harm if the injunction is not granted; (3) whether the balance of the hardships tips in favor of the movant; and (4) the impact of the injunction on the public interest. See *Novo Nordisk of N. Am., Inc. v. Genentech, Inc.*, 77 F.3d 1364, 1367 (Fed.Cir.1996); *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed.Cir.1993). Courts must consider all four factors before granting a preliminary injunction. See

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Reebok Int'l Ltd. v. J. Baker, Inc., 32 F.3d 1552, 1555 (Fed.Cir.1994). In contrast, courts may decline to issue a preliminary injunction if the movant fails to prove either of the first two factors. See *Polymer Tech., Inc. v. Bridwell*, 103 F.3d 970, 973 (Fed.Cir.1996). The burden of persuasion always remains on the movant to establish entitlement to a preliminary injunction. See *Reebok Int'l*, 32 F.3d at 1555.

To demonstrate a reasonable likelihood of success, the movant must show clearly that it owns the patent at issue, the patent is valid and enforceable, and the defendant infringed the patent. See *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1364 (Fed.Cir.), cert. denied, 118 S.Ct. 397 (1997); *Sofamor Danek Group, Inc. v. DePuy-Motech, Inc.*, 74 F.3d 1216, 1219 (Fed.Cir.1996). More specifically, in light of the presumptions and burdens that will inhere at trial, the patentee must establish a reasonable likelihood of success that: (1) the defendant infringed its patent; and (2) the defendant's challenges to validity and enforcement probably will not succeed at trial. See *Bell & Howell Document Management Prod. Co. v. Altek Sys.*, 132 F.3d 701, 705 n. 4 (Fed.Cir.1997); *New England Braiding Co., Inc. v. A.W. Chesterton Co.*, 970 F.2d 878, 882-83 (Fed.Cir.1992); *Genentech*, 108 F.3d at 1364.

A patent is presumed valid and this presumption exists throughout every stage of litigation. See 35 U.S.C. § 282; *PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566 (Fed.Cir.1996). The Federal Circuit has explained the different effects of the presumption of validity at trial and the presumption of validity at the preliminary injunction stage:

The presumption [of validity] acts as a procedural device which places the burden of going forward with evidence and the ultimate burden of persuasion of validity at the trial on the alleged infringer.... However, the presumption does not relieve a patentee who moves for a preliminary injunction from carrying the normal burden of demonstrating that it will likely succeed on all the disputed liability issues at trial, even when the issue concerns the patent's validity. At this

preliminary stage, the trial court does not resolve the validity question but rather must ... make an assessment of the persuasiveness of the challenger's evidence, recognizing that it is doing so without all of the evidence that may come out at trial.

*6 *New England Braiding*, 970 F.2d at 882-83 (emphasis added). At the preliminary injunction stage, the defendant must carry its burden of production by coming forward with evidence of invalidity. See *Canon Computer Sys., Inc. v. Nu-Kote Int'l, Inc.*, 134 F.3d 1085, 1088 (Fed.Cir.1998). If the defendant "fails to identify any persuasive evidence of invalidity, the very existence of the patent satisfies the patentee's burden on the validity issue." *Id.*; accord *New England Braiding*, 970 F.2d at 882-83. When the defendant offers proof of invalidity, the patentee must submit sufficient evidence to rebut this showing. See *Canon Computer*, 134 F.3d at 1088. In sum, the patentee must show that the alleged infringer likely will not prove that the patent is invalid at trial. See *Nutrition 21 v. United States*, 930 F.2d 867, 869-70 (Fed.Cir.1991); *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1578 (Fed.Cir.1983).

Where a patentee demonstrates a reasonable likelihood of success regarding patent validity and infringement, along with continuing infringement by the defendant, the owner obtains a rebuttable presumption of irreparable harm. See *Polymer Tech.*, 103 F.3d at 973; *Reebok Int'l*, 32 F.3d at 1556. Alleged infringers may rebut the presumption that the patentee will suffer irreparable harm with evidence that: (1) the defendant has or will soon cease the infringing activities, thus making a presumption unnecessary, see *Reebok Int'l*, 32 F.3d at 1557-59; (2) the patentee engaged in a pattern of granting licenses under the patent, making it reasonable to expect that the invasion of its patent right can be recompensed by royalties-type damages rather than an injunction, see *High Tech. Med. Instrumentation, Inc. v. New Image Indus., Inc.*, 49 F.3d 1551, 1557 (Fed.Cir.1995); (3) the patentee unduly delayed in bringing suit, thereby negating the idea of irreparability, see *T.J. Smith & Nephew Ltd. v. Consolidated Med. Equip., Inc.*, 821 F.2d

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646, 648 (Fed.Cir.1987); *Nutrition* 21, 930 F.3d at 872; (4) the patentee actually does not practice the patent, *see Rosemount, Inc. v. United States Int'l Trade Comm'n*, 910 F.2d 819, 821 (Fed.Cir.1990); and (5) the patentee maintains a large market share in comparison with the alleged infringer. *See Bell & Howell*, 132 F.3d at 708; *Illinois Tool Works, Inc. v. Grip-Pak, Inc.*, 906 F.2d 679, 683 (Fed.Cir.1990).

DISCUSSION

I. Reasonable Likelihood of Success

A. Infringement

A determination of patent infringement requires a two-step analysis. First, courts must construe the asserted claims of the patent to determine their proper scope and meaning. *See Wright Med. Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1443 (Fed.Cir.1997); *Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.*, 15 F.3d 1573, 1576 (Fed.Cir.1993). Claim construction is a question of law for the Court. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). Second, courts must determine whether the properly construed claims read onto the accused structure. *See General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 981 (Fed.Cir.1997). This is a question of fact. *See id.*

1. Claim Construction

*7 A patent does not protect everything it describes, but rather only the innovations set forth in its claims, which provide the metes and bounds of the invention. The claims of a patent, as distinguished from the specification and drawings, define the invention protected by the patent. *See Smith v. Snow*, 294 U.S. 1, 11 (1935); *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 419-20 (1908); *Novo Nordisk of N. Am.*, 77 F.3d at 1369. Courts may consult both intrinsic and extrinsic evidence as aids in construing patent claims. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). Intrinsic evidence consists of the patent itself, the claim or claims at issue, the specification, and the

prosecution history. *See id.* Extrinsic evidence includes expert testimony, inventor testimony, dictionaries, technical treatises, and prior art not cited in the prosecution history. *See Markman*, 52 F.3d at 980.

Under established rules of claim construction, intrinsic evidence of a patent constitutes "the most significant source of the legally operative meaning of disputed claim language." *Vitronics*, 90 F.3d at 1582. The claims, specification, and prosecution history constitute the public record of a patentee's claim, upon which competitors may rely. *See Markman*, 52 F.3d at 978-79. Allowing a clearly drafted claim to be altered by extrinsic evidence would destroy the rights of competitors to rely on the public record and design around the claimed invention. *See Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed.Cir.1995). Thus, reliance upon extrinsic evidence is improper where the intrinsic evidence unambiguously describes the scope of the patented invention. *See Markman*, 52 F.3d at 978-79, 986; *Bell & Howell*, 132 F.3d at 705-06.

In construing patent claims, the Court must first consider the words of the claims themselves, both asserted and unasserted. *See Vitronics*, 90 F.3d at 1582-83; *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 882 (Fed.Cir.1988). These words generally should be given their customary and ordinary meaning to one of skill in the art. *See Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1578 (Fed.Cir.1996); *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1580 (Fed.Cir.1995). However, a patentee may be his own lexicographer provided that he or she delineates any special definitions in the specification or the file history. *See Hoechst Celanese*, 78 F.3d at 1578; *Markman*, 52 F.3d at 980.

Next, the Court must review the patent specification to determine if the inventor used any terms in a manner inconsistent with their ordinary meaning. [FN2] *See Vitronics*, 90 F.3d at 1582. The specification contains a description of the invention, and the manner and process for making

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and using it in such full, clear, and exact terms as to enable any person skilled in the art to make and use it. *See* 35 U.S.C. § 112. In addition, the specification must explain the best mode or preferred embodiment for carrying out the invention, [FN3] *see id.*, and thus can serve as a dictionary for defining terms in the claims. *See Markman*, 52 F.3d at 979. However, a patented invention is defined by its claims, which may be broader in scope than the specification. *See Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270, 1277 (Fed.Cir.1995) (instructing that courts may not incorporate features of preferred embodiments or examples used in the specifications into claim definitions); *Minnesota Mining Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1566 (Fed.Cir.1992) (holding that courts may not read into a claim a limitation that appears in the specification, but not in the claim); *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121-22 (Fed.Cir.1985) (same).

FN2. Under 35 U.S.C. § 113, a patent also may contain drawings. Courts may utilize drawings to help construe claims "in the same manner and with the same limitations as the specifications." *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 398 (Ct.Cl.1967).

FN3. 35 U.S.C. § 112's disclosure requirement functions as part of a contract. The government grants a monopoly to inventors in exchange for disclosing the invention's best mode or optimal embodiment. *See Construction Tech., Inc. v. Cybermatation, Inc.*, 965 F.Supp. 416, 431 (S.D.N.Y.1997).

*8 The Court also may examine the prosecution history of the patent, if in evidence. *See Graham v. John Deere Co.*, 383 U.S. 1, 33 (1966). The prosecution history includes a "complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." *Vitronics*, 90 F.3d at 1582. These representations may include amendments and arguments made to

convince the patent examiner that the claimed invention complies with the statutory requirements of novelty, utility, and nonobviousness. *See Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 452 (Fed.Cir.1985). In addition, courts may review the prior art cited within the prosecution history to gain a general idea of what the claims do not cover. *See Autogiro*, 384 F.2d at 399. While the prosecution history should be used to construe claim language, it cannot "enlarge, diminish, or vary" the limitations in the claims. *Goodyear Dental Vulcanite Co. v. Davis*, 102 U.S. 222, 227 (1880); *Markman*, 52 F.3d at 980.

Extrinsic evidence such as expert testimony, inventor testimony, dictionaries, technical treatises, and prior art provides a final source for claim interpretation when needed to explain scientific principles, technical terms, and terms of art. *See U.S. Indus. Chems., Inc. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 678 (1942); *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed.Cir.1995). Extrinsic evidence also may demonstrate the state of the art at the time of the invention. *See Brown v. Piper*, 91 U.S. 37, 41 (1875); *Markman*, 52 F.3d at 980. While experts may testify concerning the meaning of claim language from which the Court can then determine claim construction, experts cannot provide testimony that alters the actual claim language or that contradicts the import of other parts of the specification. *See Vitronics*, 90 F.3d at 1584. Moreover, the testimony of an inventor and his attorney concerning claim construction is entitled to little or no weight. *See Bell & Howell*, 132 F.3d at 706. Lastly, courts may admit prior art not cited in the patent or prosecution history to show how a disputed term is used by those skilled in the art. *See Vitronics*, 90 F.3d at 1584.

Applying these principles to the present case, the Court may utilize Professor Sisson's test results to compare the physical properties of Sensation and Cerpess to claims 1 and 2 of the '791 patent. The Court also may consider Professor Sisson's declaration and testimony to the extent that they explain scientific principles and technical terms of art. However, claim construction remains the

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exclusive province of the Court, and the claims in this case prove relatively unambiguous. As a result, those portions of Professor Sisson's declaration and testimony that attempt to vary or contradict the plain meaning of claims 1 and 2 will not be considered.

*9 Claims can either be independent or dependent. An independent claim does not refer to any other claim of the patent and is read separately to determine its scope. *See Baracuda Int'l Corp. v. Hoffinger Indus., Inc.*, 4 F.Supp.2d 1188, 1193 (N.D.Ga.1998); *Johns Hopkins Univ. v. Cellpro*, 894 F.Supp. 819, 832 (D.Del.1995). A dependent claim refers to at least one other claim in the patent, includes all of the limitations of the claim to which it refers, and specifies a further limitation on that claim. *See Wahpeton Canvas Co., Inc. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed.Cir.1989); *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1107-08 (Fed.Cir.1987).

35 U.S.C. § 112 provides in relevant part:

[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

By definition, a dependent claim must be narrower than the independent claim upon which it relies. *See Quantum*, 65 F.3d at 1579. One may infringe an independent claim and not infringe a claim dependent upon that claim. The reverse is not true. One who does not infringe an independent claim cannot infringe a claim dependent on, and thus containing all the limitations of, that claim. *See Wolverine World Wide, Inc. v. Nike, Inc.*, 38 F.3d 1192, 1199 (Fed.Cir.1994); *Teledyne McCormick Selp v. United States*, 558 F.2d 1000, 1004 (Ct.Cl.1977). In other words, "the dependent claim tail cannot wag the independent claim dog." *North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1577 (Fed.Cir.1993). [FN4]

FN4. One court pondered the purpose of dependent claims if the patent holder must be able to recover on the independent

claim before it can recover on the dependent claim. It provided the following answer:

[D]ependent claims may serve as an aid in construing the language in the independent claims that they incorporate.... [T]he court can look to one claim in an attempt to interpret the terms of another claim--indeed the doctrine of claim differentiation requires that to be done.

...

Perhaps more importantly, a dependent claim can save a patent if the independent claim fails. Independent claims are generally drawn as broadly as possible so as to include all possible embodiments of the invention, including those that exist and those that are yet to be conceptualized. That attempt to maximize the breadth of an independent claim may later cause it to be held to be obvious from or anticipated by the prior art. Dependent claims could save the day, however, if the additional limitations included in a dependent claim would meet the otherwise unsatisfied test of nonobviousness or nonanticipation.

Zip Dee, Inc. v. Dometic Corp., 931 F.Supp. 602, 614-15 (N.D. Ill.1996) (citations omitted).

The Court disagrees with Jeneric's proposed construction of claims 1 and 2 of the '791 patent as a matter of law. In essence, Jeneric argues that the elements comprising claim 1 are not limited to the ranges set forth therein. With regard to Sensation, Jeneric acknowledges that Sensation contains 1.61% of CeO₂, more than the range of 0-1% specified in claim 1. However, it maintains that of the 1.61% of CeO₂, .92% is present in the glass matrix as an antigreening agent, while .69% is present as a fluorescing agent or additive outside of the glass matrix. (Sisson Decl. ¶¶ 20-21; Pl.'s Mem.Supp. at 15, 27.) Claim 2 covers the addition of an "opacifying agent, pigment and fluorescing agent" to the composition of claim 1. ('791 Patent, Col. 6, Claim 2). Jeneric correctly points out that the specification of the '791 patent lists CeO₂ as a fluorescing agent or additive, (*id.*, Col. 5, Line 38),

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and other patents confirm that CeO₂ may function in such a manner. (U.S.Pat. No. 4,170,823, Col. 1, Lines 22-42.) Jeneric contends that the . 92% of CeO₂, satisfies the range limitation in claim 1 as an antigreening agent, and the .69% of CeO₂ is permitted by claim 2 as a fluorescing agent or additive. (Pl.'s Mem.Supp. at 15, 27; Pl.'s Prop.Find. Fact Concl.Law ¶¶ 54, 58, 163, 164.)

*10 Jeneric attempts the same construction regarding its theory of how Cerpress infringes claim 1. Jeneric acknowledges that Cerpress contains 15.97% of Al₂O₃, more than the range of 7-15% specified by claim 1. Yet, it maintains that a portion of the Al₂O₃, "was added as an additive" and "is not within the matrix forming the leucite crystallite phase dispersed in a glass matrix." (Pl.'s Mem.Supp. at 17, 26-27.) Similar to its explanation concerning the amount of CeO₂, in Sensation, Jeneric proposes that at least . 97% of the Al₂O₃ in Cerpress exists outside of the two-phase matrix, thus allowing for infringement of claim 1. (Pl.'s Prop.Find. Fact Concl.Law ¶¶ 62, 166.) To accept Jeneric's theories of infringement, one would have to construe claim 1's components as not being limited to their weight percentage ranges. The Court refuses to do this for three reasons.

First, the language of claim 1 clearly indicates that the invention's chemical components should be limited to the precise ranges set forth therein. Claim 1 uses the word "about" to modify the stated range of the maturing temperature, the coefficient of thermal expansion, the leucite crystallite sizes, and the weight percentage of the leucite crystals. ('791 Patent, Col. 6, Claim 1.) The descriptive word "about" avoids a strict numerical boundary to the specified parameter, and its range must be interpreted in its technologic and stylistic context. See *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed.Cir.1995). "About" is neither broad nor arbitrary, but rather serves as a flexible term with a meaning similar to "approximately." See *Syntex (U.S.A.) Inc. v. Paragon Optical Inc.*, 7 U.S.P.Q.2d 1001, 1038 (D.Az.1987). As a matter of law, the term "about" gives a "clear warning that exactitude is not claimed but rather a contemplated variation." *Kolene Corp. v. Motor City Metal*

Treating, Inc., 307 F.Supp. 1251, 1258 (E.D.Mich.1969), aff'd, 440 F.2d 77 (6th Cir.1971).

However, claim 1 does not use the word "about" to modify the specific weight percentage ranges of its chemical components. Where an inventor restricts claims to a precise range of ingredients, he or she ordinarily is limited to those precise ranges. See 3 Anthony W. Deller, *Patent Claims* § 476 (2d ed.1971); *Eiselstein v. Frank*, 52 F.3d 1035, 1039 (Fed.Cir.1995). The purposeful use of the word "about" elsewhere in claim 1, while omitting it from the component ranges, yields strong evidence that the chemical elements must be limited to the exact weight percentage ranges set forth in the claim. In addition, the specification and claim 6 of the '791 patent both indicate that claim 1 represents the outer range of protection for the invention because they refer to a preferred composition within the scope of broader claim 1. ('791 Patent, Col. 3, Lines 10-20; *Id.*, Col. 6, Claim 6.)

Second, evidence shows that claim 1 needed to be written narrowly to avoid being anticipated or rendered obvious by Jeneric's United States Patent No. 4,798,536 (" '536 patent"). The '791 patent states that "[t]he second porcelain component of this invention is preferably produced in accordance with the teachings of commonly assigned U.S.Pat. No. 4,798,536...." ('791 Patent, Col. 4, Lines 34-37.) The '536 patent and the '791 patent utilize many of the same components with similar ranges, such as SiO₂, Al₂O₃, CaO, MgO, Li₂O, Na₂O, and K₂O. ('536 Patent, Cols. 3-4, Lines 63-6.) Moreover, claim 8 and example 2 of the '536 patent refer to a composition where the leucite crystallites in a final dental restoration exhibit a size of less than 5 microns. (*Id.*, Col. 10, Claim 8; *Id.*, Col. 9, Line 12 *et seq.*) Because the inventors likely claimed narrowly to distinguish from the prior art, this strengthens the conclusion that claim 1 does not encompass ranges greater than those plainly stated. See *North Am. Vaccine*, 7 F.3d at 1577 (holding that a "patent applicant cannot disclose and claim an invention narrowly and then, in the course of an infringement suit, argue that the claims should be construed to cover that which is neither described nor enabled in the patent"); *Smith v. Magic City*

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Kennel Club, Inc., 282 U.S. 784, 790 (1931).

*11 Finally, claim 1's precise weight percentage ranges may not be modified by claim 2, because claim 2 is in dependent form. Claim 2 states the following:

The two-phase porcelain composition of claim 1 further comprising at least one component selected from the group consisting of opacifying agent, pigment and fluorescing agent.

('791 patent, Col. 6, Claim 2.) (emphasis added). Quite obviously, claim 2 is dependent upon claim 1, and therefore incorporates all of the limitations contained in claim 1. See 35 U.S.C. § 112; *Wahpeton Canvas*, 870 F.2d at 1553; *Hartness Int'l*, 819 F.2d at 1107-08. As provided in section 112, dependent claims must be narrower and protect less subject matter than the independent claims upon which they rely. See *Wilson Sporting Goods Co. v. David Geoffrey & Assocs.*, 904 F.2d 677, 685-86 (Fed.Cir.1990). Dependent claims limit independent claims by adding an additional element or elements. See *Zip Dee*, 931 F.Supp. at 614. As such, the additional limitations of a dependent claim cannot be read or implied into an independent claim to help it cover an accused device, see *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1573-74 (Fed.Cir.1985), to allow it to survive a charge of invalidity, see *Wolens v. F.W. Woolworth Co.*, 703 F.2d 983, 988 (7th Cir.1983), or to permit it to escape infringement. See *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 770 (Fed.Cir.1983).

The mere fact that claim 2 allows for the addition of an opacifying agent, pigment, or fluorescing agent cannot alter claim 1's limitations. "It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend" have been found infringed. *Wahpeton Canvas*, 870 F.2d at 1553. To prove infringement of a dependent claim, the patent holder must prove each of the elements of the incorporated independent claim, as well as the added elements of the dependent claim. See *North Am. Vaccine*, 7 F.3d at 1577; *Wolverine World Wide*, 38 F.3d at 1199; *Wilson Sporting Goods*, 904 F.2d at 685-86. Where an accused device avoids the elements of the independent claim, a fortiori the device does not

infringe a dependent claim that incorporates the independent claim. See, e.g., *Wolverine World Wide*, 38 F.3d at 1199-1200; *North Am. Vaccine*, 7 F.3d at 1577; *Wilson Sporting Goods*, 904 F.2d at 685-86; *Wahpeton Canvas*, 870 F.2d at 1552 n. 9; *Hartness Int'l*, 819 F.2d at 1108; *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1576 n. 36 (Fed.Cir.1987); *Teledyne McCormick Selp*, 558 F.2d at 1004; *Baracuda Int'l*, 4 F.Supp.2d at 1193; *Zip Dee*, 931 F.Supp. at 614.

As a result of the preceding discussion, the Court construes claim 1 as being limited to the exact weight percentage ranges for its chemical components. The proper construction of claim 1 reveals that there must be a maximum of 1% of CeO_2 and 15% of Al_2O_3 in the composition of the accused devices in order to find literal infringement. Because claim 2 as a dependent claim incorporates all of the limitations of claim 1, claim 2 also permits a maximum of 1% of CeO_2 and 15% of Al_2O_3 in the composition of the accused devices in order to find literal infringement. Even though claim 2 covers the addition of an opacifying or fluorescing agent or additive, if CeO_2 or Al_2O_3 are selected, their total weight percentages must be less than 1% and 15% respectively, regardless of whether they exist "inside or outside" of the two-phase matrix. [FN5]

FN5. The Court notes that neither claim 2 nor any other section of the '791 patent mentions the possibility of the invention covering anything beyond a two-phase composition. To the contrary, claim 2 incorporates by reference the "two-phase porcelain composition of claim 1." ('791 Patent, Col. 6, Claim 2.) Hence, Jeneric's argument that some amounts of CeO_2 , in Sensation and Al_2O_3 in Cerpress exist outside of the two-phase matrix, possibly in a third phase, proves disingenuous. If Sensation or Cerpress truly contained a third phase, then they would not infringe claim 1 or claim 2.

2. Direct Infringement of the '791 Patent

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*12 Direct infringement occurs when a party "without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent." 35 U.S.C. § 271(a). To establish direct infringement, the patentee must prove by a preponderance of evidence that every element of the asserted claim, as properly construed by the Court, is found in the accused device or process, either literally or under the doctrine of equivalents. See *Wolverine World Wide*, 38 F.3d at 1196; *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535 (Fed.Cir.1991). In this regard, each and every clause of a claimed invention is considered material and essential. See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997). Even if an accused structure improves upon a patent, there is still infringement if it falls within the scope of the claim. See *Atlas Power v. E.I. duPont de Nemours & Co.*, 750 F.2d 1569, 1580-81 (Fed.Cir.1986). However, the absence of even one element and its equivalent of a claimed invention places the accused device outside the coverage of the claims.

a. Sensation

Literal infringement requires that the accused product or process include each element and limitation found in the asserted claim. See *Wright Med. Tech.*, 122 F.3d at 1443; *General Mills*, 103 F.3d at 981. The Court holds that Jeneric has failed to demonstrate a reasonable likelihood of success in proving that Sensation literally infringes claims 1 and 2 of the '791 patent. Sensation does not literally infringe because it contains 1.61% of CeO₂, whereas claim 1 unambiguously specifies a range of 0-1% for this element. As stated earlier, Jeneric's argument that claim 2 covers the addition of CeO₂ as an opacifying or fluorescing agent cannot be read onto claim 1 to alter the maximum range of this element. Because Sensation does not infringe claim 1, a fortiori it cannot infringe claim 2 which is dependent upon and narrower than claim 1. See, e.g., *Wolverine World Wide*, 38 F.3d at 1199-1200; *North Am. Vaccine*, 7 F.3d at 1577; *Wilson Sporting Goods*, 904 F.2d at 685-86; *Wahpeton*

Canvas, 870 F.2d at 1552 n. 9.

b. Cerpress

When literal infringement cannot be established, infringement may be proven under the doctrine of equivalents. The Supreme Court recently made clear that infringement under the doctrine of equivalents must be established on an element by element basis, not by comparing the accused product or process to the invention as a whole. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29, 40 (1997); *Litton Sys., Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1454 (Fed.Cir.1998). Under the "all elements" rule, the operative question concerns whether "the accused product or process contains elements identical or equivalent to each claimed element of the patented invention." *Id.*; accord *Wright Med. Tech.*, 122 F.3d at 1444 (holding that "every limitation of the asserted claim, or its equivalent," must be found in the accused subject matter); *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1349 (Fed.Cir.1998) (same). To prove infringement under the doctrine of equivalents, the accused product or process "must be shown to include an equivalent for each literally absent claim limitation." See *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 1015 (Fed.Cir.1998); *Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 1474 (Fed.Cir.1998). [FN6]

FN6. Prior to *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed.Cir.1987), some Federal Circuit cases found infringement when the accused device viewed in its entirety had been compared to the claimed invention as a whole. See *D.M.I.*, 755 F.2d at 1575. This changed in 1987 when the Federal Circuit sitting en banc announced that in analyzing infringement under the doctrine of equivalents, courts should apply an element by element approach to require that each limitation of the asserted claim be found in the accused product or process, either literally or equivalently. See *Pennwalt*, 833 F.2d at 935; see also *Perkin-Elmer Corp. v. Westinghouse Elec.*

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Corp., 822 F.2d 1528, 1533 (Fed.Cir.1987). The Supreme Court has adopted this approach, *see Warner-Jenkinson*, 520 U.S. at 40, which the Federal Circuit has recognized. *See Litton Sys.*, 140 F.3d at 1454; *Hughes Aircraft*, 140 F.3d at 1474.

*13 To determine "equivalence" under the doctrine of equivalents, the fact finder must first determine the range of equivalents to which the claimed limitation is entitled in light of the prosecution history and the prior art. *See Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1459 (Fed.Cir.1998); *Sage Prods., Inc. v. Devon Indus.*, 126 F.3d 1420, 1424 (Fed.Cir.1997); *Conroy v. Reebok Int'l, Ltd.*, 14 F.3d 1570, 1577 (Fed.Cir.1994). The fact finder then should apply the "insubstantial differences" test and should also consider the "function-way-result" test to determine if the substituted element of the accused structure is equivalent to the claimed element. *See Warner-Jenkinson*, 520 U.S. at 39-40; *Dawn Equip.*, 140 F.3d at 1016. Each test attempts to enforce the doctrine's purpose of preventing a fraud on the patent by copyists, attempting to avoid infringement by making unimportant and insubstantial changes and substitutes in a patent. *See Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607-08 (1958). The insubstantial differences test mandates infringement when the substituted element of an accused structure differs from the element that is literally claimed only insubstantially. *See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309, 1315-16 (Fed.Cir.1998); *Wright Med. Tech.*, 122 F.3d at 1444. Under the function-way-result test, one considers whether the substituted element of the accused structure at issue "performs substantially the same function, in substantially the same way, to achieve substantially the same result," as the limitation at issue in the claim. *See Graver Tank*, 339 U.S. at 610; *Tronzio v. Biomet, Inc.*, 156 F.3d 154, 1160 (Fed.Cir.1998).

One important factor in both of these tests concerns "whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was." *Graver Tank*, 339 U.S. at 610; *Sofamor*

Danek Group, Inc. v. DePuy-Motech, Inc., 74 F.3d 1216, 1221-22. In addition, consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with other ingredients, and the function which it is intended to perform. *See Graver Tank*, 339 U.S. at 609. In this regard, "the proper time for evaluating equivalency--and thus knowledge of interchangeability between elements--is at the time of infringement, not at the time the patent was issued." *Warner-Jenkinson*, 520 U.S. at 37.

"Application of the doctrine of equivalents is the exception, however, not the rule." *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed.Cir.1991). The doctrine is not a license to ignore structural and functional limitations on which the public is entitled to rely in avoiding infringement. *See Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1582 (Fed.Cir.1996). First, there can be no infringement if the asserted scope of equivalency regarding what is literally claimed encompasses, or is obvious in light of, the prior art. *See Sage Prods.*, 126 F.3d at 1425 (holding that a patentee may not deliberately claim narrowly in light of the prior art, and then later seek protection for a foreseeable alteration by a competitor through the doctrine of equivalents); *General Am. Transp. Co. v. Cyro-Trans, Inc.*, 93 F.3d 766, 771 (Fed.Cir.1996). Second, the doctrine of equivalents cannot be used to recapture subject matter that was relinquished during prosecution of the patent ("prosecution history estoppel"). *See Athletic Alternatives*, 73 F.3d at 1582; *Sofamor Danek Group*, 74 F.3d at 1222.

*14 The Court holds that Jeneric has not demonstrated a reasonable likelihood of success in proving that Cerpress infringes claim 1 of the '791 patent under the doctrine of equivalents. An accused composition cannot infringe as a matter of law if it does not contain even a single limitation of the asserted claim. Jeneric has not asserted the doctrine of equivalents with respect to the element of Al_2O_3 in claim 1. (Pl.'s Prop.Find. Fact Concl.Law ¶¶ 62, 166; Pl.'s Mem.Supp. at 17, 27.) It invokes the doctrine only with regard to the element of Li_2O . [FN7] (Pl.'s Mem.Supp. at 16, 18,

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27- 28; Pl.'s Hr'g Br. at 5; Pl.'s Prop.Find. Fact Concl.Law ¶¶ 63-65.) Hence, in order to find infringement, the amount of Al₂O₃ in Cerpress must literally fall within the range in claim 1. See *Warner-Jenkinson*, 520 U.S. at 29, 40; *Wright Med. Tech.*, 122 F.3d at 1444; *Digital Biometrics*, 149 F.3d at 1349. Claim 1 unambiguously specifies that an infringing composition must contain between 7-15% of Al₂O₃; however, Cerpress contains 15.97% of this element. Thus, Cerpress cannot infringe claim 1 even if Jeneric were to prove that the amounts of BaO, B₂O₃, and Na₂O in Cerpress are equivalent to Li₂O. [FN8] The Supreme Court's "all elements" rule in *Warner-Jenkinson* mandates this result.

FN7. The Court notes that Professor Sisson offered three alternative explanations to account for the extra Al₂O₃ in Cerpress. (Sisson Decl. ¶ 25.) Jeneric did not attempt to produce any evidence in support of any of these conclusory speculations regarding possible motives for the inclusion of Al₂O₃ in Cerpress. Instead, Jeneric maintains that some portion of the Al₂O₃ was added as an additive. (Pl.'s Mem.Supp. at 17, 27; Pl.'s Prop.Find. Fact Concl.Law ¶¶ 62, 166.) This theory presumably is similar to that rejected by the Court for Sensation. For the sake of argument, even if Jeneric had asserted the doctrine of equivalents with respect to Al₂O₃ (which it has not), the Court would still be forced to conclude that Cerpress does not infringe the '791 patent. Simply put, Jeneric has not come forward with a coherent legal theory and supporting evidence to show that the extra .97% of Al₂O₃ is equivalent to any claimed limitation in claim 1.

FN8. This being the case, the Court expresses no opinion as to whether the amounts of BaO, B₂O₃, and Na₂O in Cerpress perform the same function, in the same manner, to achieve the same result as the 0.5-3% of Li₂O in claim 1.

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B. Validity

The defendants Dillon and Chemichl have filed two separate motions for partial summary judgment, each addressing the validity of claims 1 and 2 of the '791 patent. The defendants bear the burden of proof to establish invalidity by clear and convincing evidence at trial. However, the Court need not decide these issues in this ruling because it finds that Jeneric failed to demonstrate a reasonable likelihood of success on infringement.

II. Irreparable Harm

Where a patentee demonstrates a reasonable likelihood of success regarding patent validity and infringement, along with continuing infringement by the defendant, the owner obtains a rebuttable presumption of irreparable harm. See *Polymer Tech.*, 103 F.3d at 973; *Reebok Int'l*, 32 F.3d at 1556. Jeneric has not shown a reasonable likelihood of success, thus, it is not entitled to a rebuttable presumption of irreparable harm.

III. Balance of the Harms and the Public Interest

District courts must balance the harm to the patentee that will result from the denial of the preliminary injunction with the harm to the defendant that will result if the injunction is entered. Factors relevant to this inquiry include effects on businesses' market share, reputation and good will, sales, and employees. See, e.g., *Illinois Tool Works, Inc. v. Grip-Pak, Inc.*, 906 F.2d 679, 682 (Fed.Cir.1990); *Atlas Powder Co. v. Ireco Chems.*, 773 F.2d 1230, 1234 (Fed.Cir.1985); *Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 28 U.S.P.Q.2d 1362, 1371 (D.Del.1993); *Tensar Corp. v. Tenax Corp.*, 24 U.S.P.Q.2d 1605, 1614 (D.Md.1992). Clearly, the businesses of Dillon and Chemichl would be greatly harmed by the issuance of an injunction in light of the Court's finding that Jeneric failed to demonstrate a likelihood of success on infringement. Hence, the balance of harms favors the defendants. The public interest also is served by the denial of a preliminary injunction in this case. See *Novo Nordisk of N. Am.*, 77 F.3d at 1371 (holding that neither the public interest nor equity

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favors the grant of an injunction against one who does not infringe).

CONCLUSION

*15 Because Jeneric has not demonstrated a reasonable likelihood of success that Sensation and Cerpress infringe the '791 patent, Jeneric's motion for a preliminary injunction [Doc. No. 7] is denied.

SO ORDERED.

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Motions, Pleadings and Filings (Back to top)

- 3:98CV00818 (Docket)
(May. 01, 1998)

END OF DOCUMENT

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West Reporter Image (PDF)

205 F.3d 1377, 54 U.S.P.Q.2d 1086

Briefs and Other Related Documents

United States Court of Appeals,
Federal Circuit.
JENERIC/PENTRON, INC., Plaintiff-Appellant,
v.
DILLON COMPANY, INC. and Chemichl, Inc., Defendants-Appellees.
No. 99-1283.
March 20, 2000.

Patentee assignee brought action against seller of accused dental products, alleging infringement of patent claiming a two-phase porcelain composition comprising a leucite crystallite phase dispersed in a glass phase. Seller asserted various affirmative defenses and counterclaims, including non-infringement and invalidity. The United States District Court for the District of Connecticut, Ellen Bree Burns, Senior Judge, 1999 WL 66537, denied assignee's motion for preliminary injunction, and assignee appealed. The Court of Appeals, Rader, Circuit Judge, held that: (1) patent limited ranges of chemical components to the exact weight percentage ranges recited in the patent; (2) accused products were not likely to literally infringe patent; and (3) district court's reliance on assignee's expert's table in denying motion for injunction as to claim under doctrine of equivalents was harmless.

Affirmed.

West Headnotes
[1] KeyCite Notes

- ↳ 291 Patents
 - ↳ 291XII Infringement
 - ↳ 291XII(C) Suits in Equity
 - ↳ 291k293 Preliminary Injunction
 - ↳ 291k293.1 k. In General. Most Cited Cases

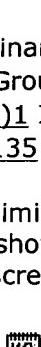
Patent owner may preliminarily enjoin alleged infringing conduct to exercise its right to exclude pending final adjudication. 35 U.S.C.A. § 283.


[2] KeyCite Notes

- ↳ 212 Injunction
 - ↳ 212IV Preliminary and Interlocutory Injunctions
 - ↳ 212IV(A) Grounds and Proceedings to Procure
 - ↳ 212IV(A)2 Grounds and Objections
 - ↳ 212k138.1 k. In General. Most Cited Cases

A preliminary injunction requires the movant to show four factors: (1) a reasonable likelihood of success on the merits, (2) the prospect of irreparable harm, (3) a balance of the parties' hardships in favor of injunction, and (4) no potential injury to an important public interest.


[3] KeyCite Notes



- ↳ 212 Injunction

- ↳ 212IV Preliminary and Interlocutory Injunctions

- ↳ 212IV(A) Grounds and Proceedings to Procure

- ↳ 212IV(A)1 In General

- ↳ 212k135 k. Discretion of Court. Most Cited Cases

The grant of a preliminary injunction is within the trial court's discretion; an abuse of discretion may be established by showing that the court made a clear error of judgment in weighing relevant factors or exercised its discretion based upon an error of law or clearly erroneous factual findings.

- [4] KeyCite Notes

- ↳ 212 Injunction

- ↳ 212IV Preliminary and Interlocutory Injunctions

- ↳ 212IV(A) Grounds and Proceedings to Procure

- ↳ 212IV(A)2 Grounds and Objections

- ↳ 212k138.6 k. Nature and Extent of Injury; Irreparable Injury. Most Cited Cases

- ↳ 212 Injunction

- ↳ 212IV Preliminary and Interlocutory Injunctions

- ↳ 212IV(A) Grounds and Proceedings to Procure

- ↳ 212IV(A)2 Grounds and Objections

- ↳ 212k138.18 k. Likelihood of Success on Merits. Most Cited Cases

Factors of likelihood of success and irreparable harm are central to the movant's burden in seeking a preliminary injunction, and a court may decline to issue a preliminary injunction if the movant does not prove either of these factors.

- [5] KeyCite Notes

- ↳ 291 Patents

- ↳ 291XII Infringement

- ↳ 291XII(C) Suits in Equity

- ↳ 291k293 Preliminary Injunction

- ↳ 291k295 k. Establishment of Validity of Patent in General. Most Cited Cases

- ↳ 291 Patents

- ↳ 291XII Infringement

- ↳ 291XII(C) Suits in Equity

- ↳ 291k293 Preliminary Injunction

- ↳ 291k298 k. Establishment of Infringement. Most Cited Cases

Showing of likelihood of success on the merits, for purpose of obtaining preliminary injunction in patent infringement action, requires proof on both validity and infringement.

- [6] KeyCite Notes

- ↳ 291 Patents

- ↳ 291XII Infringement

- ↳ 291XII(C) Suits in Equity

- ↳ 291k324 Appeal

☞ 291k324.5 k. Scope and Extent of Review in General. Most Cited Cases

To determine the likelihood of success on patent infringement, for purpose of preliminary injunction motion, Court of Appeals may construe the claim as a matter of law; the court then determines whether the accused product is likely to fall within the properly construed claim.



[7] KeyCite Notes

☞ 291 Patents

☞ 291XII Infringement

☞ 291XII(A) What Constitutes Infringement

☞ 291k226.5 Substantial Identity of Subject Matter

☞ 291k226.6 k. Comparison with Claims of Patent. Most Cited Cases

An accused product infringes if it embodies each patent claim element or its equivalent.



[8] KeyCite Notes

☞ 291 Patents

☞ 291IX Construction and Operation of Letters Patent

☞ 291IX(A) In General

☞ 291k159 k. Extrinsic Evidence in General. Most Cited Cases

☞ 291 Patents

☞ 291IX Construction and Operation of Letters Patent

☞ 291IX(B) Limitation of Claims

☞ 291k167 Specifications, Drawings, and Models

☞ 291k167(1) k. In General. Most Cited Cases

☞ 291 Patents

☞ 291IX Construction and Operation of Letters Patent

☞ 291IX(B) Limitation of Claims

☞ 291k168 Proceedings in Patent Office in General

☞ 291k168(2) Rejection and Amendment of Claims

☞ 291k168(2.1) k. In General. Most Cited Cases

☞ 291 Patents

☞ 291XII Infringement

☞ 291XII(C) Suits in Equity

☞ 291k324 Appeal

☞ 291k324.5 k. Scope and Extent of Review in General. Most Cited Cases

Construction of patent claim is a matter of law, which Court of Appeals reviews independently; to determine claim meaning, Court retains at all times its focus on the claims themselves, but also consults the written description, the prosecution history, and at times extrinsic evidence to discern the scientific and technological context at the time of invention.



[9] KeyCite Notes

☞ 291 Patents

☞ 291IX Construction and Operation of Letters Patent

☞ 291IX(B) Limitation of Claims



☞ 291k179 k. Claims for Compositions of Matter. Most Cited Cases

Patent claiming a two-phase porcelain composition comprising a leucite crystallite phase dispersed in a glass phase limited the ranges of chemical components to the exact weight percentage ranges recited in the patent, particularly since other variables in same claim explicitly used qualifying language.

[10] KeyCite Notes

☞ 291 Patents

☞ 291IV Applications and Proceedings Thereon

☞ 291k101 Claims

☞ 291k101(2) k. Construction in General. Most Cited Cases

In general, a term such as "about" in a patent claim is not subject to a precise construction but is dependent on the factual situation presented.

[11] KeyCite Notes

☞ 291 Patents

☞ 291II Patentability

☞ 291II(D) Anticipation

☞ 291k63 Prior Patents

☞ 291k66 Operation and Effect

☞ 291k66(1.12) k. Compositions, Compounds, and Medicinal Preparations. Most Cited Cases

When a patent claims a chemical composition in terms of ranges of elements, any single prior art reference that falls within each of the ranges anticipates the claim.

[12] KeyCite Notes

☞ 291 Patents

☞ 291IX Construction and Operation of Letters Patent

☞ 291IX(B) Limitation of Claims

☞ 291k168 Proceedings in Patent Office in General

☞ 291k168(2) Rejection and Amendment of Claims

☞ 291k168(2.1) k. In General. Most Cited Cases

Patentee may not rely on the precise ranges of chemical compositions in patent claims to distinguish itself from prior art during prosecution and then later construe the ranges more broadly during an infringement action.

[13] KeyCite Notes

☞ 291 Patents

☞ 291XII Infringement

☞ 291XII(A) What Constitutes Infringement

☞ 291k226.5 Substantial Identity of Subject Matter

☞ 291k226.6 k. Comparison with Claims of Patent. Most Cited Cases

An accused product literally infringes a patent if every limitation recited in the claim appears in the accused product, that is, the properly construed claim reads on the accused product exactly.



[14] KeyCite Notes

291 Patents

- 291XII Infringement
 - 291XII(A) What Constitutes Infringement
 - 291k249 Patents for Compositions of Matter
 - 291k250 k. Identity in General. Most Cited Cases

Patent claiming a two-phase porcelain composition comprising a leucite crystallite phase dispersed in a glass phase, which specified a claimed range of 0-1% cerium oxide, was not likely infringed by accused product containing 1.61% of cerium oxide, even if only 0.92% of cerium oxide in accused product acted as antigreening agent while remainder acted as opacifying or fluorescing agent outside of the claimed two-phase matrix.



[15] KeyCite Notes

291 Patents

- 291XII Infringement
 - 291XII(A) What Constitutes Infringement
 - 291k249 Patents for Compositions of Matter
 - 291k250 k. Identity in General. Most Cited Cases

Accused dental product would not literally infringe dependent claim of patent for two-phase porcelain composition that allowed addition of components as opacifying agent, pigment, or fluorescing agent, as dependent claim incorporated limitation of independent claim that specified range of 0-1% cerium oxide, and accused product contained 1.61% of cerium oxide, even though only 0.92% of cerium oxide in accused product acted as antigreening agent while remainder acted as opacifying or fluorescing agent outside of the claimed two-phase matrix.



[16] KeyCite Notes

291 Patents

- 291IX Construction and Operation of Letters Patent
 - 291IX(B) Limitation of Claims
 - 291k165 Operation and Effect of Claims in General
 - 291k165(5) k. Construction of Particular Claims as Affected by Other Claims. Most Cited Cases

A dependent patent claim, by nature, incorporates all the limitations of the claim to which it refers. 35 U.S.C.A. § 112.



[17] KeyCite Notes

291 Patents

- 291XII Infringement
 - 291XII(A) What Constitutes Infringement
 - 291k233 Patents for Machines or Manufactures
 - 291k237 k. Substitution of Equivalents. Most Cited Cases

The doctrine of equivalents requires that the accused product contain each limitation of a patent claim or its equivalent, and an element in the accused product is equivalent to a claim element if the differences between the two are insubstantial to one of ordinary skill in the art.



[18] KeyCite Notes

291 Patents

- ↳ 291XII Infringement
 - ↳ 291XII(C) Suits in Equity
 - ↳ 291k293 Preliminary Injunction
 - ↳ 291k303 k. Application and Proceedings Thereon. Most Cited Cases

291 Patents

- ↳ 291XII Infringement
 - ↳ 291XII(C) Suits in Equity
 - ↳ 291k324 Appeal
 - ↳ 291k324.56 k. Harmless Error. Most Cited Cases

District court's sole reliance on comparison table prepared by patent assignee's expert in denying assignee's motion for preliminary injunction on claim of infringement under the doctrine of equivalents was harmless, despite conflicting evidence, in light of trial court's considerable discretion; court was correct to hold assignee to its burden to show a likelihood of success and, therefore, to construe its own evidence against it.



[19] KeyCite Notes

291 Patents

- ↳ 291XII Infringement
 - ↳ 291XII(C) Suits in Equity
 - ↳ 291k293 Preliminary Injunction
 - ↳ 291k300 k. Irreparable or Comparative Injury. Most Cited Cases

Where party seeking preliminary injunction failed to show reasonable likelihood of success on its patent infringement claims, it was not entitled to a rebuttable presumption of irreparable harm.



KeyCite Notes

291 Patents

- ↳ 291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents
 - ↳ 291k328 Patents Enumerated
 - ↳ 291k328(2) k. Original Utility. Most Cited Cases

4,798,536, 5,653,791. Cited.

***1379** William J. Cass, Cantor Colburn LLP, of Windsor, Connecticut, argued for plaintiff-appellant. With him on the brief were Michael A. Cantor, Leah M. Reimer, and Michael J. Rye. Peter K. Sommer, Phillips, Lytle, Hitchcock, Blaine & Huber LLP, of Buffalo, New York, argued for defendants-appellees. With him on the brief was Rowland Richards.

Before NEWMAN, Circuit Judge, ARCHER, Senior Circuit Judge, and RADER, Circuit Judge.

RADER, Circuit Judge.

The United States District Court for the District of Connecticut denied Jeneric/Pentron, Inc.'s (Jeneric's) motion for a preliminary injunction against Dillon Company, Inc. and Chemichl, Inc. (collectively, Dillon). See *Jeneric/Pentron, Inc. v. Dillon Co.*, No. 3:98-CV-818 (EBB), 1999 WL 66537 (D.Conn. Feb. 3, 1999) (*Jeneric*). Because Jeneric has not shown sufficient reason to overturn the trial court's denial of a preliminary injunction, this court affirms.

I.

Both Jeneric and Dillon sell porcelain dental restoration products. Jeneric received U.S. Patent No. 5,653,791 ('791 patent) by assignment. The '791 patent covers a two-phase porcelain composition comprising a leucite crystallite phase dispersed in a glass phase. Porcelain compositions are "useful in the preparation and repair of dental restorations such as porcelain-fused-to metal restorations, all-ceramic restorations, inlays, onlays and veneers." '791 patent, col. 1, II. 8-11. In dentistry, porcelain compositions are highly desirable because "they can be colored to closely resemble the teeth they must replace, resist degradation inside the oral cavity and remain biocompatible." *Id.* at II. 16-21.

Claims 1 and 2, the only asserted claims, recite:

1. A two-phase porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix, a maturing temperature of from *about* 750° to *about* 1050° C. and a coefficient of thermal expansion of from *about* 12×10^{-6} /°C. to *about* 17.5×10^{-6} /°C. (room temperature to 450° C.), said porcelain composition comprising:

Component	Amount (wt.%)
SiO ₂	57-66
Al ₂ O ₃	7-15
K ₂ O	7-15
Na ₂ O	7-12
Li ₂ O	0.5-3
CaO	0-3
MgO	0-7
F	0-4
CeO ₂	0-1

wherein the leucite crystallites possess diameters not exceeding *about* 10 microns and represent from *about* 5 to *about* 65 weight percent of the two-phase porcelain composition.

2. The two-phase porcelain composition of claim 1 further comprising at least one component selected from the group consisting of opacifying agent, pigment and fluorescing agent.

Id. at col. 6, II. 12-36 (emphasis added). The '791 patent emphasizes that "[i]t is essential to the practice of the present invention that the leucite crystallites present in the two-phase porcelain composition herein possess diameters not exceeding about 10 microns." *Id.* at col. 2, II. 49-52.

Dillon sells the two accused dental products - Cerppress SL (Cerppress) and Sensation SL (Sensation) - that are used together for construction of dental restorations. Cerppress is a ceramic pellet used as a core or base material; Sensation is an overlay material applied over the Cerppress core to form a complete dental implant. Dillon imports these products from Chemichl, Inc.'s parent company (Chemichl AG) in Liechtenstein. Dillon resells the two products to dental technicians and dentists.

*1380 On May 1, 1998, Jeneric sued Dillon alleging infringement of the '791 patent. Soon thereafter, on June 26, 1998, Jeneric filed a motion for a preliminary injunction. In the motion, Jeneric alleged that Sensation literally infringes claims 1 and 2 of the '791 patent, and that Cerppress infringes claim 1 of the '791 patent under the doctrine of equivalents. Dillon, in turn, asserted various affirmative defenses and counterclaims, including non-infringement and invalidity.

The district court first addressed Jeneric's motion. After a three-day hearing, in which the parties presented oral testimony and over 500 exhibits, the district court denied Jeneric's motion for a

preliminary injunction. The district court concluded, *inter alia*, that Jeneric did not show a reasonable likelihood of success on infringement. Jeneric appeals.

II.

[1] [KC] [2] [KC] [3] [KC] Under 35 U.S.C. § 283 (1994), a patent owner may preliminarily enjoin alleged infringing conduct to exercise its right to exclude pending final adjudication. A preliminary injunction requires the movant to show four factors: (1) a reasonable likelihood of success on the merits, (2) the prospect of irreparable harm, (3) a balance of the parties' hardships in favor of injunction, and (4) no potential injury to an important public interest. See *Hybritech Inc. v. Abbott Labs.*, 849 F.2d 1446, 1451, 7 USPQ2d 1191, 1195 (Fed.Cir.1988). The grant of a preliminary injunction is within the trial court's discretion. See *Sofamor Danek Group, Inc. v. DePuy-Motech, Inc.*, 74 F.3d 1216, 1219, 37 USPQ2d 1529, 1531 (Fed.Cir.1996). "An abuse of discretion may be established by showing that the court made a clear error of judgment in weighing relevant factors or exercised its discretion based upon an error of law or clearly erroneous factual findings." *Novo Nordisk of N. Am. v. Genentech, Inc.*, 77 F.3d 1364, 1367, 37 USPQ2d 1773, 1775 (Fed.Cir.1996).

[4] [KC] "Central to the movant's burden are the likelihood of success and irreparable harm factors." *Sofamor Danek*, 74 F.3d at 1219. A court may decline to issue a preliminary injunction if the movant does not prove either of these factors. See *Polymer Techs., Inc. v. Bridwell*, 103 F.3d 970, 973, 41 USPQ2d 1185, 1188 (Fed.Cir.1996).

Likelihood of Success

[5] [KC] [6] [KC] [7] [KC] In reviewing a preliminary injunction decision, the likelihood of success factor plays a key role. See *Sofamor Danek*, 74 F.3d at 1219. This showing requires proof on both validity and infringement. See *Hybritech*, 849 F.2d at 1451. To determine the likelihood of success on patent infringement, this court may construe the claim as a matter of law. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976, 34 USPQ2d 1321, 1326 (Fed.Cir.1995) (en banc), aff'd, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The court then determines whether the accused product is likely to fall within the properly construed claim. See *id.* An accused product infringes if it embodies each claim element or its equivalent. See *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1562, 19 USPQ2d 1500, 1503 (Fed.Cir.1991).

[8] [KC] The first step, claim construction, is a matter of law, which this court reviews independently. See *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed.Cir.1998) (en banc). To determine claim meaning, this court retains at all times its focus on the claims themselves, but also consults the written description, the prosecution history, and at times extrinsic evidence to discern the scientific and technological context at the time of invention. See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309, 51 USPQ2d 1161, 1168 (Fed.Cir.1999); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed.Cir.1996).

*1381 [9] [KC] Under that guideline, the district court construed the claims of the '791 patent by reviewing the specification, prosecution history, and extrinsic evidence. In so doing, the court rejected Jeneric's proposed construction that the dental porcelain composition ranges of the table in claim 1 may vary from the recited values. Instead, the district court construed claim 1 as limiting the ranges of compositions to "the exact weight percentage ranges." *Jeneric*, 1999 WL 66537, at *11. Based on this preliminary record, this court agrees.

[10] [KC] As the district court correctly stated, the claim language "indicates that the invention's chemical components should be limited to the precise ranges set forth therein." *Jeneric*, 1999 WL 66537, at *10. The district court's claim interpretation finds support in claim construction principles enunciated by this court in other cases. In general, "[a] term such as 'about' is not subject to [] a

precise construction … but is dependent on the factual situation presented.” *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1280, 6 USPQ2d 1277, 1282 (Fed.Cir.1988). Without broadening words that ordinarily receive some leeway, see *Modine Manufacturing Co. v. United States International Trade Commission*, 75 F.3d 1545, 1554, 37 USPQ2d 1609, 1615 (Fed.Cir.1996), the precise weight ranges of claim 1 do not “avoid [] a strict numerical boundary to the specified parameter,” *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217, 36 USPQ2d 1225, 1229 (Fed.Cir.1995).

This construction, assigning numerical precision to composition ranges, is particularly appropriate when other variables in the same claims explicitly use qualifying language. See *Modine Mfg.*, 75 F.3d at 1551. Claim 1 contains a mixture of imprecise and precise claim limitations. Specifically, claim 1 uses the word “about” to qualify the values of many variables: the range of the maturing temperature, the coefficient of thermal expansion, the leucite crystallite sizes, and the weight percentage of leucite crystals. In contrast, the claim recites precise ranges for the weight of dental compositions. Under these circumstances, the district court correctly limited the weight ranges to those recited precisely in the table of claim 1.

This reading finds additional support in the written description of the '791 patent. As illustrated below, columns 2 and 3 of a table in the '791 patent disclose the outermost and preferred ranges of dental compositions, respectively:

Oxide	Range	Preferred	Example 1	Example 2
SiO ₂	57-66	58-65	62.1	58.0
Al ₂ O ₃	7-15	8-14	9.8	14.0
K ₂ O	7-15	11-15	14.2	15
Na ₂ O	7-12	7.5-11	7.6	8.1
Li ₂ O	0.5-3	0.7-1.5	1.1	1.5
CaO	0-3	0-1.5	1.0	1.0
MgO	0-7	0-5	1.9	1.0
F	0-4	0-3	1.9	1.0
CeO ₂	0-1	0-0.5	0.4	0.4
Coefficient of thermal expansion (RT to 450 °C.) (x 10 -6 / °C.)	12-17.5	12-17.5	15.0	17.4
Maturing Temperature (°C.)	790- 1050	800- 1000	815	850
Maturing Temperature (°F.)	1318- 1922	1472- 1832	1500	1562

'791 patent, col. 3, II. 10-26. Claim 1 covers the outermost ranges listed in column 2 of the table while independent claim 6, not asserted in the present action, covers *1382 the preferred ranges listed in column 3. Under the correct reading of the claims, the porcelain composition ranges represent the outermost bounds of the disclosed embodiments. The specification's teachings are consistent with this claim construction.

[11]   The district court also found that “evidence shows that claim 1 needed to be

written narrowly to avoid being anticipated or rendered obvious by Jeneric's United States Patent No. 4,798,536 ('536 patent)." Jeneric, 1999 WL 66537, at *10. In fact, the '791 patent incorporates by reference the '536 patent, which issued over six years before the filing date of the '791 patent. The '536 patent teaches use of dental compositions nearly identical or overlapping with the ranges recited in claim 1 of the '791 patent. "[W]hen a patent claims a chemical composition in terms of ranges of elements, any single prior art reference that falls within each of the ranges anticipates the claim." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1346, 51 USPQ2d 1943, 1946 (Fed.Cir.1999). Thus, Jeneric may not rely on the precise ranges of the claims to distinguish itself from prior art during prosecution and then later construe the ranges more broadly during an infringement action. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1677 (Fed.Cir.1995). The district court properly acknowledged this principle. In sum, this court agrees with the district court that claim 1 limited the compositions to the ranges listed in the table. Applying the construed claim to the accused device, this court agrees with the district court that Jeneric has not shown a reasonable likelihood of success on infringement. Jeneric presents two theories of infringement: (1) Sensation literally infringes claims 1 and 2 of the '791 patent, and (2) Cerpress infringes claim 1 of the '791 patent under the doctrine of equivalents.



[13] [14] Turning first to literal infringement, an accused product literally infringes if every limitation recited in the claim appears in the accused product, i.e., the properly construed claim reads on the accused product exactly. See Amhil Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562, 38 USPQ2d 1471, 1476 (Fed.Cir.1996). The parties agree that most of the limitations of claim 1 literally read on Sensation. The parties dispute, however, the amount of CeO₂ (cerium oxide). Jeneric concedes that Sensation contains 1.61% of cerium oxide, outside the claimed range of 0-1%. Nevertheless, Jeneric contends that Sensation literally infringes. According to Jeneric, the total amount of cerium oxide in Sensation separates into two components. The first - 0.92% of cerium oxide - acts as an antigreening agent and, thus, falls within the 0-1% range of claim 1. The remaining - 0.69% of cerium oxide - acts as an opacifying or fluorescing agent in a third phase outside the claimed two-phase matrix. To make this argument, Jeneric relies in part on the open-ended nature of claims 1 and 2 having "comprising" transitions. Thus, Jeneric argues that a portion of cerium oxide in the claimed range falls within the literal limits while the remaining portion merely adds to the allegedly infringing matrix. To bolster this argument, Jeneric points to dependent claim 2, reciting a two-phase composition further containing opacifying agent, pigment, and fluorescing agent. Claim 1 requires a two-phase dental porcelain composition with 0-1% of cerium oxide. Claim 1 does not place functional limitations on the percentage of cerium oxide, thus distinguishing opacifying, coloring, or fluorescing cerium oxide from anti-greening cerium oxide. Rather, the claim specifies 0-1% cerium oxide. Sensation contains 1.61% - an amount well outside the precisely claimed range. This court rejects any attempt to carve out a portion of cerium oxide according to functions not recited in the claim. Jeneric's infringement theory essentially proposes that the precisely claimed ranges do not limit the *1383 amount of porcelain compositions. That argument fails because it would read out of claim 1 the express claim ranges. See Unique Concepts, 939 F.2d at 1563. Thus, this court agrees with the district court's determination that Jeneric has not shown a reasonable likelihood of success on literal infringement by Sensation.



[15] [16] This court also sustains the district court's conclusion that Sensation would not literally infringe claim 2, dependent on claim 1. Dependent claim 2 allows addition of components as an opacifying agent, a pigment, or a fluorescing agent. Nonetheless, a dependent claim, by nature, incorporates all the limitations of the claim to which it refers. See 35 U.S.C. § 112, ¶ 4 (1994). The claimed ranges of claim 1, therefore, apply with equal force to claim 2. Thus, Sensation, containing 1.61% of cerium oxide, also does not infringe claim 2. To hold otherwise would violate a fundamental principle of patent law that "dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed." Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553, 10 USPQ2d 1201, 1208 (Fed.Cir.1989).



[17] Absent literal infringement, an accused product may nonetheless infringe under the doctrine of equivalents. The doctrine of equivalents requires that the accused product contain each limitation of the claim or its equivalent. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 40,

117 S.Ct. 1040, 137 L.Ed.2d 146, 41 USPQ2d 1865, 1876 (1997). An element in the accused product is equivalent to a claim element if the differences between the two are "insubstantial" to one of ordinary skill in the art. See Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1517, 35 USPQ2d 1641, 1644 (Fed.Cir.1995) (en banc), *rev'd on other grounds*, 520 U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997).

The district court held that "Jeneric has not demonstrated a reasonable likelihood of success in proving that Cerpress infringes claim 1 of the '791 patent under the doctrine of equivalents." Jeneric, 1999 WL 66537, at *14. In its opinion, the district court noted that "Jeneric has not asserted the doctrine of equivalents with respect to the element of Al₂O₃ in claim 1 ... and invokes the doctrine only with regard to the element of Li₂O." *Id.* Having so noted, the district court summarily determined that Cerpress contained 15.97% of Al₂O₃ (aluminum oxide) and, therefore, does not literally fall within the claimed range of 7-15%. See *id.* Because it discerned that Cerpress does not literally infringe the aluminum oxide claim limitation, the district court did not perform an equivalents analysis for lithium oxide of claim 1. Skirting the equivalency issue, the district court noted: "Cerpress cannot infringe claim 1 even if Jeneric were to prove that the amounts of BaO, B₂O₃, and Na₂O in Cerpress are equivalent to Li₂O." *Id.*

This analysis does not resolve infringement by equivalents for several reasons. First, the record reveals conflicting evidence on the amount of aluminum oxide Cerpress contains. Indeed, each party's evidence undercuts its own infringement position. A comparison table (the Sisson Table) - prepared by Jeneric's expert Professor Sisson - upon which the parties and the district court relied heavily, states Cerpress contains 15.97% of aluminum oxide -literally outside the claimed 7-15%. However, Dillon's evidence tends to prove the contrary. Dillon's own technical expert and owner of Chemichl AG, Dr. Michl, admitted that Cerpress contains 15.1% of aluminum oxide with a tolerance of ±0.1%. Dr. Michl also testified that lithium oxide is the sole difference between Cerpress and the claimed invention, thus suggesting that Cerpress falls literally within the aluminum oxide limitation. Moreover, the testing results of Terrachem - the testing laboratory Dillon retained - show that Cerpress contains 14.98% of aluminum oxide. Therefore, the record facts do not resolve the question of Cerpress's literal *1384 infringement of the aluminum oxide limitation.



[18] Despite the conflicting evidence, the district court appears to have relied solely upon the Sisson Table. That reliance, in the context of a preliminary injunction motion - where the trial court has considerable discretion - is harmless. The trial court is correct to hold Jeneric to its burden to show a likelihood of success and, therefore, to construe its own evidence against it. For this reason, no doubt, the district court relied solely on the Sisson Table in the context of a preliminary injunction motion.

Because the district court did not conduct an equivalents analysis, this court need not purport to review a decision not made. This court merely notes that this preliminary record discloses several issues for resolution during trial. For instance, the Sisson Table shows that Cerpress contains 0.041% of lithium oxide, outside the claimed 0.5-3%. A full record will show whether that difference is insubstantial. Also, Jeneric argues that the district court must consider evidence that barium oxide (1.02% of BaO), boron oxide (1.95% of B₂O₃), and sodium oxide (Na₂O) can act as fluxes and substitutes for lithium oxide. Dillon does not dispute that these compounds were known to function as fluxes. However, questions on the quantities necessary to substitute for lithium oxide require further factual development.

While affirming the district court's denial of a preliminary injunction, this court does not reach the issue of infringement under the doctrine of equivalents. That highly factual inquiry rarely comes clear on a premature record. Nonetheless, the district court will have the opportunity to adjudicate fully the merits of infringement under the doctrine of equivalents.

Other Factors



[19] Turning to the other factors, the district court determined that Jeneric did not show irreparable harm, and that the balance of hardships on the parties favored Dillon. With regard to the

irreparable harm factor, the district court correctly stated: "Jeneric has not shown a reasonable likelihood of success, thus, it is not entitled to a rebuttable presumption of irreparable harm." *Jeneric, 1999 WL 66537, at *14*. On appeal, Jeneric does not present any argument on the other factors. Jeneric's lack of argument on the finding of irreparable harm further supports the district court's denial of a preliminary injunction.

III.

Jeneric showed neither a likelihood of success on infringement nor irreparable harm. Therefore, under the highly deferential standard of review applicable to a preliminary injunction, this court determines that the district court properly denied Jeneric's motion. Because the district court did not abuse its discretion, this court affirms.

COSTS

Each party shall bear its own costs.

AFFIRMED.

C.A.Fed. (Conn.),2000.

Jeneric/Pentron, Inc. v. Dillon Company, Inc.

205 F.3d 1377, 54 U.S.P.Q.2d 1086

Briefs and Other Related Documents ([Back to top](#))

- [1999 WL 33636489](#) (Appellate Brief) Reply Brief for Plaintiff-Appellant (Jul. 13, 1999) [Original Image of this Document \(PDF\)](#) 
- [1999 WL 33636488](#) (Appellate Brief) Brief for Defendants-Appellees (Jun. 14, 1999) [Original Image of this Document \(PDF\)](#) 
- [1999 WL 33607213](#) (Appellate Brief) Brief for Plaintiff-Appellant (May. 04, 1999)
- [99-1283](#) (Docket) (Mar. 08, 1999)

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Motions, Pleadings and Filings

United States District Court,
D. Connecticut.
JENERIC/PENTRON, INC. Plaintiff
v.
DILLON COMPANY, INC., Chemichl Inc., and
Chemichl AG., Defendants
Nos. 3:98CV818 (EBB), 3:99CV1775 (EBB).

Aug. 29, 2001.

Assignee of patents for dental porcelain composition sued competitors for infringement. On cross-motions for summary judgment, the District Court, Ellen B. Burns, Senior District Judge, held that: (1) ranges of chemical components were limited to exact weight percentage ranges recited in claim; (2) crystal size limitation referred to their size in final composition, not to their size in raw material; (3) fact issue existed as to whether patent was anticipated; (4) patent was not invalid under on-sale bar; (5) patents were not literally infringed; (6) infringement of one patent under doctrine of equivalents was barred by prosecution history estoppel; (7) fact issue existed as to whether second patent was infringed under doctrine of equivalents; and (8) fact issue existed as to whether second patent was invalid as having been fraudulently obtained.

Motions granted in part and denied in part.

See also 205 F.3d 1377.

West Headnotes

[1] Patents 323.2(2)

291k323.2(2) Most Cited Cases

In patent infringement case, summary judgment is

appropriate when it is apparent that only one conclusion as to infringement could be reached by reasonable jury.

[2] Patents 323.2(2)

291k323.2(2) Most Cited Cases

Summary judgment of noninfringement is appropriate where patent owner's proof is deficient in meeting essential part of legal standard for infringement, since such failure will render all other facts immaterial.

[3] Patents 314(5)

291k314(5) Most Cited Cases

Patent claim construction is question of law for court.

[4] Patents 314(5)

291k314(5) Most Cited Cases

Whether accused device contains element corresponding to each patent claim limitation, or its equivalent, is question of fact for trial.

[5] Patents 165(2)

291k165(2) Most Cited Cases

Patent does not protect everything it describes, but rather only innovations set forth in its claims, which provide metes and bounds of invention.

[6] Patents 165(2)

291k165(2) Most Cited Cases

[6] Patents 167(1)

291k167(1) Most Cited Cases

Claims of patent, as distinguished from specification and drawings, define invention protected by patent.

[7] Patents 165(1)

291k165(1) Most Cited Cases

[7] Patents 167(1)

291k167(1) Most Cited Cases

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[7] Patents ↗168(2.1)

291k168(2.1) Most Cited Cases

"Intrinsic evidence" for construing patent consists of patent itself, claim or claims at issue, specification, and prosecution history.

[8] Patents ↗159

291k159 Most Cited Cases

"Extrinsic evidence" for construing patent includes expert testimony, inventor testimony, dictionaries, technical treatises, and prior art not cited in prosecution history.

[9] Patents ↗159

291k159 Most Cited Cases

Construing court's reliance upon extrinsic evidence is improper where intrinsic evidence unambiguously describes scope of patented invention.

[10] Patents ↗165(5)

291k165(5) Most Cited Cases

"Independent claim" does not refer to any other claim of patent and is read separately to determine its scope.

[11] Patents ↗165(5)

291k165(5) Most Cited Cases

"Dependent claim" refers to at least one other claim in patent, includes all limitations of claim to which it refers, and specifies further limitation on that claim.

[12] Patents ↗165(5)

291k165(5) Most Cited Cases

By definition, dependent patent claim must be narrower than independent claim upon which it relies.

[13] Patents ↗226.6

291k226.6 Most Cited Cases

One may infringe independent patent claim and not infringe claim dependent upon that claim, but one who does not infringe independent claim cannot infringe claim dependent on, and thus containing all limitations of, that claim.

[14] Patents ↗179

291k179 Most Cited Cases

Patent for dental porcelain composition limited ranges of chemical components to exact weight percentage ranges recited in claim.

[15] Patents ↗179

291k179 Most Cited Cases

Requirement in patent for dental porcelain composition, that leucite crystals possess "diameters not exceeding about 10 microns," was limitation on crystal size in final composition, not on crystal size in raw material.

[16] Patents ↗112.5

291k112.5 Most Cited Cases

All patents are entitled to presumption of validity, which may only be overcome by clear and convincing evidence of invalidity. 35 U.S.C.A. § 282.

[17] Patents ↗72(1)

291k72(1) Most Cited Cases

To anticipate patent claim, prior art reference must disclose every limitation of claimed invention, either explicitly or inherently.

[18] Federal Civil Procedure ↗2508

170Ak2508 Most Cited Cases

Issue of material fact as to conditions under which leucite crystals in prior art reference would grow precluded summary judgment on issue of whether patent for dental porcelain composition, calling for certain sized crystals in finished product, was anticipated.

[19] Patents ↗81

291k81 Most Cited Cases

To challenge patent as invalid under on-sale bar, accused infringer must demonstrate by clear and convincing evidence that: (1) there was sale or offer to sell more than one year before application for subject patent, and (2) that subject matter of sale or offer to sell fully anticipated claimed invention. 35 U.S.C.A. § 102(b).

[20] Patents ↗314(5)

291k314(5) Most Cited Cases

Whether particular activity raises on-sale bar to patentability is question of law, based on underlying

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factual considerations. 35 U.S.C.A. § 102(b).

[21] Patents ↗76

291k76 Most Cited Cases

Alleged patent infringer's sending of samples to potential buyers more than one year before date of patent application for dental porcelain composition was not commercial offer for sale, within meaning of on-sale bar to patentability; activity was mere invitation to make offers to alleged infringer. 35 U.S.C.A. § 102(b).

[22] Patents ↗312(4)

291k312(4) Most Cited Cases

To establish direct infringement, patentee must prove by preponderance of evidence that every element of asserted claim, as properly construed by court, is found in accused device or process, either literally or under doctrine of equivalents. 35 U.S.C.A. § 271(a).

[23] Patents ↗250

291k250 Most Cited Cases

Patent for dental porcelain composition containing lithium oxide was not literally infringed by accused product which did not contain that chemical.

[24] Patents ↗230

291k230 Most Cited Cases

[24] Patents ↗237

291k237 Most Cited Cases

Patent infringement under doctrine of equivalents must be established on element by element basis, not by comparing accused product or process to invention as a whole.

[25] Patents ↗314(5)

291k314(5) Most Cited Cases

Patent infringement under doctrine of equivalents is question of fact.

[26] Patents ↗168(2.1)

291k168(2.1) Most Cited Cases

"Prosecution history estoppel" prevents patentee from recapturing subject matter surrendered during prosecution of patent.

[27] Patents ↗314(5)

291k314(5) Most Cited Cases

Application of prosecution history estoppel is question of law for court to decide.

[28] Patents ↗168(3)

291k168(3) Most Cited Cases

Patent application amendment, adding flux modifier lithium oxide as ingredient to claim for dental porcelain composition, was presumably made for purpose of patentability, and thus patentee was precluded, under doctrine of prosecution history estoppel, from arguing that compositions using different flux modifiers infringed under doctrine of equivalents; although addition was not required in order to overcome prior art, there was no evidence that addition was for reason other than patentability.

[29] Patents ↗168(2.1)

291k168(2.1) Most Cited Cases

Claim limitations arising from prosecution history of child patent were not applicable to similar claim language which was original part of parent patent.

[30] Patents ↗323.2(3)

291k323.2(3) Most Cited Cases

Issue of material fact as to whether accused product's flux modifier was equivalent to lithium oxide called for in patent for dental porcelain composition precluded summary judgment on issue of whether patent was infringed under doctrine of equivalents.

[31] Patents ↗97

291k97 Most Cited Cases

Party challenging validity of patent on ground of inequitable conduct must show by clear and convincing evidence that alleged misrepresentation or nondisclosure occurred, that misrepresentation or nondisclosure was material, and that patent applicant acted with intent to deceive Patent Office.

[32] Patents ↗97

291k97 Most Cited Cases

Materiality of information patent applicant must disclose to examiner is measured by whether there is substantial likelihood that reasonable examiner would have considered information important in

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deciding whether to allow application to issue as patent.

[33] Patents ↗97

291k97 Most Cited Cases

Patent applicant who disclosed prior art patent and directed examiner to place in materials indicating potential overlap with invention did not commit fraud, even though it did not expressly point out calculations embodied in prior art which became relevant in subsequent infringement suit; once disclosure of prior art was made, entire content of such patent was presumed to be before examiner, and no intent to deceive could be inferred.

Patents ↗328(2)

291k328(2) Most Cited Cases

4,101,330, 4,604,366, 4,798,536, 5,698,019. Cited As Prior Art.

Patents ↗328(2)

291k328(2) Most Cited Cases

5,653,791. Cited.

Patents ↗328(2)

291k328(2) Most Cited Cases

5,944,884. Not Infringed.

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Ruling on Cross Motions for Summary Judgment

ELLEN B. BURNS, Senior District Judge.

Plaintiff Jeneric/Pentron, Inc. ("Jeneric") brought this patent infringement action against Defendants Dillon Company, Inc. ("Dillon"), Chemichl, Inc. ("Chemichl"), and Chemichl AG ("Chemichl AG"), pursuant to 35 U.S.C. § 271 (1998), alleging that Defendants sell two products that infringe United States Patent No. 5,653,791 entitled "Two-Phase

Dental Porcelain Composition" ("'791 Patent") and United States Patent No. 5,944,884 entitled "Dental Porcelain Composition" ("'884 Patent"). Jeneric seeks an injunction, damages, and attorney's fees as remedies. In turn, Dillon and Chemichl have asserted federal and state counterclaims against Jeneric. This ruling addresses Defendants' Combined Motions for Summary Judgment [doc. no. 84]; and Plaintiff's Cross Motion for Partial Summary Judgment [doc. no. 92]. For the reasons that follow, Defendants' combined motions are granted in part and denied in part, and Plaintiff's cross motion is denied.

*53 I. BACKGROUND

A. Parties and Competing Products

Plaintiff manufactures dental materials and related oven equipment, which it markets to dentists and dental technicians for the construction of dental restorations such as inlays, crowns, and bridges. Plaintiff is the owner by assignment of the '791 and '884 patents. Inventors Carlino Panzera and Lisa Kaiser filed the '791 Patent application on March 12, 1996, and the '884 Patent application on May 28, 1998. The United States Patent and Trademark Office (PTO) issued the '791 Patent on August 5, 1997 and issued the '884 Patent on August 31, 1999.

Both patents relate to dental porcelain compositions, which have specified ingredients and which exhibit certain properties. Porcelain is a type of ceramic material, which has a crystalline phase and a glass phase. Ceramics prove useful in dental restorations because they can be colored to resemble teeth and they resist degradation inside the oral cavity. The '791 and '884 patents both teach a two-phase porcelain composition, which comprises a leucite crystallite phase disbursed in a glass phase. According to Plaintiff, the critical feature of both patents is that they direct a composition where the leucite crystals in a completed dental restoration must all be smaller than 10 microns. Indeed, both patents provide that "[i]t is essential to the practice of the present invention that the leucite crystallites present in the two-phase porcelain composition herein possess diameters not exceeding about 10 microns." ('791 Patent, col. 2, lines 48-50; '884

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Patent, col. 2, lines 54-57.) This has the effect of reducing abrasive wear against natural teeth and discomfort inside the mouth. (Id.)

Defendants Dillon, based in Rhode Island, and Chemichl, based in Washington, sell two dental porcelain products used in conjunction with each other that Plaintiff accuses of infringing both the '791 and the '884 patents. The first product, known as Cerpress SL ("Cerpress"), constitutes a ceramic pellet used as a core or base material in a dental restoration. The second product, known as Sensation SL ("Sensation"), is applied over the Cerpress core to form a complete dental implant. Dillon and Chemichl import Cerpress and Sensation into the United States from Chemichl's parent company, Chemichl AG of the Country of Liechtenstein. Dillon then resells the two products to dental technicians and dentists for the construction of dental restorations.

B. Procedural Background

Plaintiff's first action charges Defendants with infringement of the '791 Patent, asserting that Sensation literally infringes claims 1 and 2, and that Cerpress infringes claim 1 under the doctrine of equivalents. [Doc. 3:98cv818(EBB)] As relief, Plaintiff seeks an injunction pursuant to 35 U.S.C. § 283, treble damages pursuant to 35 U.S.C. § 284, and reasonable attorney's fees and costs under 35 U.S.C. § 285. Defendants respond with the affirmative defenses that Sensation and Cerpress do not infringe any claim of the '791 Patent, that each claim of the '791 Patent is invalid and void, and that the '791 Patent is unenforceable.

In addition, Dillon has asserted the following counterclaims against Jeneric: (1) tortious interference with contractual relations; (2) tortious interference with business relations; (3) violation of the Connecticut Unfair Trade Practices Act, Conn. Gen.Stat. §§ 42-110a et seq.; and (4) wrongful attempt to monopolize in violation of Section 2 of the Sherman Antitrust Act, 15 U.S.C. § 2 (1998). To this end, Dillon seeks a declaratory judgment of *54 noninfringement, a declaratory judgment that the '791 Patent is invalid, treble damages, punitive

damages, and attorney's fees and costs. Jeneric responds to the counterclaims by arguing that Dillon failed to state a claim upon which relief can be granted, that the counterclaims are unduly vague, and that Dillon is guilty of unclean hands.

On June 26, 1998, Plaintiff moved for a preliminary injunction, seeking to enjoin Defendants from making, using, selling, offering to sell, or importing the two accused products into the United States. Pursuant to this motion, the Court held a three-day hearing where the parties presented oral testimony and over 500 exhibits. On February 3, 1999, the Court denied Plaintiff's preliminary injunction motion on the ground that it failed to demonstrate a reasonable likelihood of success in proving that either Sensation or Cerpress infringed the '791 Patent. *See Jeneric/Pentron, Inc. v. Dillon Co.*, No. 3:98cv818(EBB), 1999 WL 66537 (D.Conn. Feb. 3, 1999). On March 20, 2000, the Federal Circuit affirmed this Court's decision. *See Jeneric/Pentron, Inc. v. Dillon Co.*, 205 F.3d 1377 (Fed.Cir.2000).

During the pendency of the preliminary injunction proceedings and its appeal, Plaintiff prosecuted the application that ultimately issued as the '884 Patent. This application was filed on May 28, 1998, four weeks after Plaintiff initiated the '791 Patent infringement action. The PTO issued the '884 Patent on August 31, 1999, and on September 9, 1999, Plaintiff filed a second action against Defendants for infringement of the '884 Patent. [Doc. No. 3:99cv1775(EBB)] Defendants deny the allegations and filed counterclaims against Plaintiff for 1) a declaratory judgment regarding the relative rights of the parties with respect to infringement of the '884 Patent; 2) fraudulent procurement of the '884 Patent; 3) "attempt to monopolize," in violation of the Sherman Act, 15 U.S.C. § 2; 4) unfair competition under Connecticut Common law; and 5) unfair practices in violation of CUTPA.

Under the first action, Defendants had filed two motions for partial summary judgment. On April 7, 2000, following a conference in Chambers, this Court consolidated the two actions. Defendants then withdrew their pending motions for summary

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judgment without prejudice in order to refile the motions directed at both the '791 and the '884 Patents. In a letter dated May 2, 2000, Plaintiff identified its asserted claims. Plaintiff now asserts claim 1 of the '791 Patent against Cerpresso under the doctrine of equivalents, and asserts claims 1-8, 13-15 and 18 of the '884 Patent against both Cerpresso and Sensation. Defendants' Combined Motions for Summary Judgment and Plaintiff's Cross Motion for Summary Judgment are before the Court.

II. SUMMARY JUDGMENT

A motion for summary judgment will be granted when "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed.R.Civ.P. 56(c); *see also Anderson v. Liberty Lobby*, 477 U.S. 242, 256, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). The moving party carries the burden of showing the absence of any genuine issue of material fact. Fed.R.Civ.P. 56. The court must "resolve all ambiguities and draw all inferences in favor of the nonmoving party...." *Aldrich v. Randolph Cent. Sch. Dist.*, 963 F.2d 520, 523 (2d Cir.).

"[T]he mere existence of *some* alleged factual dispute between the parties will not *55 defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact. As to materiality, the substantive law will identify which facts are material. Only disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted." *Anderson*, 477 U.S. at 247-48, 106 S.Ct. 2505 (emphasis in original).

In addition, if the nonmoving party has failed to make a sufficient showing on an essential element of his case with respect to which he has the burden of proof at trial, then summary judgment is appropriate. *Celotex Corp. v. Catrett*, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986).

"In such a situation, there can be 'no genuine issue as to any material fact,' since a complete failure of proof concerning an essential element of the nonmoving party's case necessarily renders all other facts immaterial." *Id.* at 322- 23, 106 S.Ct. 2548; *accord Goenaga v. March of Dimes Birth Defects Found.*, 51 F.3d 14, 18 (2d. Cir.1995) (movant's burden satisfied if it can point to an absence of evidence to support an essential element of nonmoving party's claim).

[1][2] In a patent infringement case, summary judgment is appropriate when it is apparent that only one conclusion as to infringement could be reached by a reasonable jury. *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 540 (Fed.Cir.1998). Summary judgment of noninfringement is appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, since such failure will render all other facts immaterial. *See London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1537 (Fed.Cir.1991). "The purpose of summary judgment is not to deprive a litigant of trial, but to avoid an unnecessary trial when only one outcome can ensue. The court's construction of the claims may lead to summary disposition of the issue of infringement when no material facts remain in dispute, or when the nonmovant can not prevail on its own view of the facts." *Vivid Tech., Inc. v. American Science & Eng'g, Inc.*, 200 F.3d 795, 806 (Fed.Cir.1999) (citing *Voice Techs. Group, Inc. v. VMC Sys., Inc.* 164 F.3d 605, 612 (Fed.Cir.1999)).

On cross-motions for summary judgment, "[e]ach party carries the burden on its own motion to show entitlement to judgment as a matter of law after demonstrating the absence of any genuine disputes over material facts." *Massey v. Del Labs., Inc.* 118 F.3d 1568, 1573 (Fed.Cir.1997). The party seeking summary judgment always bears the initial burden of establishing the absence of a genuine issue of material fact and that it is entitled to judgment as a matter of law. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). The burden then shifts, and "the nonmoving party [must] go beyond the pleading and by her own affidavits, or by the 'depositions,

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answers to interrogatories, and admissions on file,' designate 'specific facts showing that there is a genuine issue for trial.' " *Glaverbel Societe Anonyme & Fosbel, Inc. v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1560-61 (Fed.Cir.1995) (quoting *Celotex*, 477 U.S. at 324, 106 S.Ct. 2548). Broad conclusory statements by the nonmoving party and/or its experts on the ultimate issue of infringement, however, are insufficient to create a genuine issue of material fact and defeat summary judgment. See *Arthur A. Collins, Inc. v. Northern Telecom, Ltd.*, 216 F.3d 1042, 1046 (2000); *56 *Capital Imaging v. Mohawk Valley Medical Assoc.*, 996 F.2d 537, 542 (2d Cir.1993) ("Non-moving party [must] produce probative evidence [and] must do more than simply show that there is some metaphysical doubt as to the material facts." (quotations omitted)); *W.L. Gore & Assoc. v. Garlock, Inc.*, 842 F.2d 1275, 1280 (Fed.Cir.1988) ("Where the evidence of infringement consists merely of one expert's opinion, without supporting tests or data, the district court is under no obligation to accept it.").

III. STATEMENT OF FACTS

The following undisputed facts are culled from the parties' Local Rule 9(c) Statements, and the exhibits attached to their respective motions. The Court sets forth only those facts deemed necessary to an understanding of the issues raised in, and decision rendered on, these motions.

The '791 Patent issued on August 5, 1997 from an application filed on March 12, 1996. Claim 1 of the '791 Patent reads as follows:

1. A two-phase porcelain composition comprising a leucite crystallite phase dispersed in a feldspathic glass matrix, a maturing temperature of from about 750° to about 1050 ° C. and a coefficient of thermal expansion of from about 12x10 -6/° C. to about 17.5x10 6/° C. (room temperature to 450° C.), said porcelain composition comprising:

Component	Amount (wt. %)
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SiO ₂	57-66
Al ₂ O ₃	7-15
K ₂ O	7-15
Na ₂ O	7-12
Li ₂ O	0.5-3
CaO	0-3
MgO	0-7
F	0-4
CeO ₂	0-1

wherein the leucite crystallites possess diameters not exceeding about 10 microns and represent from about 5 to about 65 weight percent of the two-phase porcelain composition.

('791 Patent, col. 6, lines 11-32.) The '884 Patent issued on August 31, 1999 from an application filed on May 28, 1998. Claim 1 of the '884 Patent reads as follows:

1. A porcelain composition comprising a leucite crystallite phase and a glass matrix phase, the leucite crystallites possessing diameters not exceeding about 10 microns and representing from about 5 to about 65 weight percent of the porcelain composition, and wherein the porcelain composition comprises:

Component	Amount (wt.%)
SiO ₂	58-65
Al ₂ O ₃	7-15
K ₂ O	7-15
Na ₂ O	7-12
Li ₂ O	0.5-3

('884 Patent, col. 6, lines 20-34.)

The '884 Patent application is a "child" application that is a continuation of a "parent" application which was a division of a "grandparent" application that matured into the '791 Patent. Under 35 U.S.C. §

120, patents related in these ways are entitled to the benefit of the first application date. Therefore, the '884 Patent is accorded the benefit of the '791 Patent's March 12, 1996 filing date.

Due to the abundance of facts and diversity of

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arguments at bar, the remaining facts will be discussed as they arise in relation to specific arguments. All facts recited herein are undisputed unless otherwise indicated.

IV. DISCUSSION

Defendants' seek summary judgment, requesting a declaration of noninfringement and a ruling that 1) the asserted claims of the '791 and '884 patents are invalid because they are "anticipated" under 35 U.S.C. § 102(b) by the issuance of United States Patent No. 4,604,366 (" '366 Patent") in 1986; 2) that the asserted *57 claims of the '884 Patent are invalid because they are "anticipated" by Defendant Chemichl Ag's LF-1-PFM composition which was "on sale" under 35 U.S.C. § 102(b) in the United States more than one year prior to the application date of the patents at issue; 3) that Cerpresa does not infringe any asserted claim; and 4) that the '884 Patent is unenforceable because Plaintiff perpetrated a fraud on the PTO. [FN1] In response, Plaintiff opposes Defendants' combined motions for summary judgment, raising material issues of disputed facts, and cross moves for partial summary judgment on infringement of the '884 Patent by the Sensation product.

FN1. Defendants' motions included a request for sanctions against Plaintiff under Rule 11. In a subsequent pleading, however, Defendants' withdrew their Rule 11 motion "without prejudice for the moment", pending resolution of a motion to compel disclosure of "pre-Complaint testing data", still before the Court at this time. (Reply Mem. in Supp. of Defs.' Combined Mots. for Summ. J., and in Opp'n to Pl.'s Cross-Mot. for Summ. J. at 34.)

[3][4] Any determination of patent infringement requires a two-step analysis. First, courts must construe the asserted claims of the patent to determine their proper scope and meaning. See *Wright Med. Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1443 (Fed.Cir.1997); *Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.*, 15 F.3d 1573, 1576 (Fed.Cir.1993). Claim construction is a

question of law for the court. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), aff'd, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Second, courts must determine whether the properly construed claims read onto the accused structure. See *General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 981 (Fed.Cir.1997). Whether the accused device contains an element corresponding to each claim limitation, or its equivalent, is a question of fact for trial. See id.

A. Claim Construction

[5][6][7][8] A patent does not protect everything it describes, but rather only the innovations set forth in its claims, which provide the metes and bounds of the invention. The claims of a patent, as distinguished from the specification and drawings, define the invention protected by the patent. See *Smith v. Snow*, 294 U.S. 1, 11, 55 S.Ct. 279, 79 L.Ed. 721 (1935); *Novo Nordisk v. Genentech, Inc.*, 77 F.3d 1364, 1369 (Fed.Cir.1996). Courts may consult both intrinsic and extrinsic evidence as aids in construing patent claims. See *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). Intrinsic evidence consists of the patent itself, the claim or claims at issue, the specification, and the prosecution history. See id. Extrinsic evidence includes expert testimony, inventor testimony, dictionaries, technical treatises, and prior art not cited in the prosecution history. See *Markman*, 52 F.3d at 980.

[9] Under established rules of claim construction, intrinsic evidence of a patent constitutes "the most significant source of the legally operative meaning of disputed claim language." *Vitronics*, 90 F.3d at 1582. The claims, specification, and prosecution history constitute the public record of a patentee's claim, upon which competitors may rely. See *Markman*, 52 F.3d at 978-79. Allowing a clearly drafted claim to be altered by extrinsic evidence would destroy the rights of competitors to rely on the public record and design around the claimed invention. See *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed.Cir.1995). Thus, reliance upon extrinsic evidence is improper where

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the intrinsic evidence unambiguously describes the scope of the patented invention. *See *58 Markman*, 52 F.3d at 978-79, 986; *Bell & Howell*, 132 F.3d at 705-06.

In construing patent claims, a court must first consider the words of the claims themselves, both asserted and unasserted. *See Vitronics*, 90 F.3d at 1582-83. These words generally should be given their customary and ordinary meaning to one of skill in the art. *See Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1578 (Fed.Cir.1996). Next, a court must review the patent specification to determine if the inventor used any terms in a manner inconsistent with their ordinary meaning. *See Vitronics*, 90 F.3d at 1582. The specification contains a description of the invention, and the manner and process for making and using it in such full, clear, and exact terms as to enable any person skilled in the art to make and use it. *See 35 U.S.C. § 112*. In addition, the specification must explain the best mode or preferred embodiment for carrying out the invention, *see id.*, and thus can serve as a dictionary for defining terms in the claims. *See Markman*, 52 F.3d at 979.

Courts also may examine the prosecution history of the patent, if in evidence. *See Graham v. John Deere Co.*, 383 U.S. 1, 33, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966). The prosecution history includes a "complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." *Vitronics*, 90 F.3d at 1582. Extrinsic evidence such as expert testimony, inventor testimony, dictionaries, technical treatises, and prior art provides a final source for claim interpretation when needed to explain scientific principles, technical terms, and terms of art. *See U.S. Indus. Chems., Inc. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 678, 62 S.Ct. 839, 86 L.Ed. 1105 (1942); *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed.Cir.1995).

[10][11][12][13] Claims can either be independent or dependent. An independent claim does not refer to any other claim of the patent and is read

separately to determine its scope. A dependent claim refers to at least one other claim in the patent, includes all of the limitations of the claim to which it refers, and specifies a further limitation on that claim. *See Wahpeton Canvas Co., Inc. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed.Cir.1989); 35 U.S.C. 112. By definition, a dependent claim must be narrower than the independent claim upon which it relies. *See Quantum*, 65 F.3d at 1579. One may infringe an independent claim and not infringe a claim dependent upon that claim. The reverse is not true. One who does not infringe an independent claim cannot infringe a claim dependent on, and thus containing all the limitations of, that claim. *See Wolverine World Wide, Inc. v. Nike, Inc.*, 38 F.3d 1192, 1199 (Fed.Cir.1994). In other words, "the dependent claim tail cannot wag the independent claim dog." *North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1577 (Fed.Cir.1993).

1. Prior Claim Construction of the '791 Patent

[14] In the context of ruling on Plaintiff's preliminary injunction motion, this Court construed claims 1 and 2 of the '791 Patent. Plaintiff argued that the elements comprising claims 1 and 2 were not limited to the weight percentage ranges set forth therein. The Court rejected Plaintiff's proposed construction and construed claim 1

as being limited to the exact weight percentage ranges for its chemical components. The proper construction of claim 1 reveals that there must be a maximum of 1% of CeO₂ and 15% of *59 A₁ O₂ in the composition of the accused devices in order to find literal infringement.

Jeneric/Pentron, 1999 WL 66537 at *11. The Court also found that claim 1's precise weight percentage may not be modified by claim 2, because claim 2 is in dependent form. *See id.* at *10-*11.

Based on this construction, the Court denied Plaintiff's request for a preliminary injunction, finding that Plaintiff had

failed to demonstrate a reasonable likelihood of success in proving that Sensation literally

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infringes claims 1 and 2 of the '791 patent. Sensation does not literally infringe because it contains 1.61% of CeO₂, whereas claim 1 unambiguously specifies a range of 0-1% for this element.

Id. at *14. In regard to infringement by Cerpress, the Court found that "Jeneric has not demonstrated a reasonable likelihood of success in proving that Cerpress infringes claim 1 of the '791 patent under the doctrine of equivalents," because while it invoked the doctrine of equivalents in regard to lithium oxide, it did not assert the doctrine with respect to aluminum oxide, a second element whose weight percentage, tested at 15.97%, fell outside the specified range claimed in the '791 Patent. *Id.*

On appeal, the Federal Circuit agreed that, "the claim language indicates that the invention's chemical components should be limited to the precise ranges set forth therein," and upheld this Court's construction of the '791 Patent. *Jeneric/Pentron, Inc. v. Dillon Co., Inc.*, 205 F.3d 1377, 1381-82 (Fed.Cir.2000). In regard to the application of the construed claim to the accused devices, the Federal Circuit agreed with this Court's determination that because Sensation contains 1.61% of cerium oxide (CeO₂), and claim 1 limits the range to 0-1%, Jeneric did not show a reasonable likelihood of success on literal infringement by Sensation. *See id.* at 1382-83.

In regard to whether Cerpress infringes on claim 1 of the '791 Patent under the doctrine of equivalents, the Federal Circuit upheld this Court's determination that Jeneric had not demonstrated a likelihood of success in the context of a preliminary injunction motion, but did not reach the issue of infringement because this Court had not actually performed an equivalents analysis for the lithium oxide in claim 1, and conflicting evidence in the "preliminary record disclos[ed] several issues for resolution during trial." *Id.* at 1384. Based upon thorough review, and in light of the Federal Circuit's ruling, this Court adheres to its prior construction of claim 1 of the '791 Patent as being limited to the exact weight percentage ranges for its chemical components.

2. Additional Construction of the '791 Patent and Construction of the '884 Patent

[15] Additional construction of claim 1 of the '791 Patent and construction of the same element in claim 1 of the '884 Patent is necessary in connection with Defendants' claim of invalidity by anticipation, and Plaintiff's response thereto. A dispute exists as to whether the limitation that the leucite crystals possess "diameters not exceeding about 10 microns", ('791 Patent, Column 6, lines 29-30; '884 Patent, Column 6, lines 21- 22), found in claim 1 of each patent, refers to the micron size in the raw material or in the final composition. Plaintiff urges the Court to construe this limitation as the size of leucite crystals required in the "final restoration," relying on the specification in each "Summary of the Invention Section":

It is essential to the practice of the present invention that the leucite crystallites *60 present in the two-phase porcelain composition herein possess diameters not exceeding about 10 microns. Diameters in excess of about 10 microns will impart an undesirably rough and uneven surface to the composition *when employed in its intended environment of use*. Indeed, it has been determined that leucite diameters above about 10 microns may wear away *local dentition* and cause discomfort/irritation *inside the oral cavity*.

('791 Patent, col. 2, lines 49-57; '884 Patent, col. 2, lines 54-62 (emphasis added)). Plaintiff argues that these statements make clear that the leucite crystal size limitation is directed to the "final restoration."

Defendants, however, argue that the plain language in both claims refers to a "porcelain composition" rather than a "final restoration." Specifically, Defendants point to claim 14 of the '884 Patent, which discloses a "*dental restoration* comprising a high expansion metal alloy or ceramic framework and at least one coating fused thereon of the *porcelain composition* of claim 1," ('884 Patent, col. 7, lines 54-56 (emphasis added)), as proof that claim 1 does not refer to a "final restoration." According to Defendants, this differentiation in terms shows that the "not exceeding about 10

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"microns" limitation refers to the leucite crystal size in the raw material rather than in the final product.

While the Court is aware that "a patent claim is not necessarily limited to a preferred embodiment disclosed in the specification," see *Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270, 1277 (Fed.Cir.1995), and that judges may not read into a claim a limitation that appears in the specification but not in the claim, see *Minnesota Mining Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1566 (Fed.Cir.1992); *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121-22 (Fed.Cir.1985), the Federal Circuit has "repeatedly stated" that "claims must be read in view of the specification of which they are a part," that the specification is usually "dispositive," and that the specification "is the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582.

Here, the disputed limitation in claim 1 of each patent, read in light of the specifications cited by Plaintiff, are, in the Court's view, unambiguous. Neither claims to being, in and of itself, a final dental restoration. Rather both claims disclose a "dental porcelain composition ... useful in the preparation and repair of dental restorations such as porcelain-fused-to metal restorations, all-ceramic restorations, inlays, onlays, and veneers." ('791 Patent, col. 1, lines 4-11; '884 Patent, col. 1, lines 13-20.) Therefore, Defendants' citation to claim 14 is inapposite. When Plaintiff asks the Court to construe the leucite crystal size limitation in claim 1 as the size required in the "final restoration," the Court understands this to mean the final porcelain composition taught by the claim. In other words, the limitation refers to the leucite crystal properties as they exist in the final product offered by the invention, not to the size of the leucite crystals before they are blended and heated. The fact that the invention's porcelain composition might serve as a glaze on a dental restoration, rather than embody the entire restoration, does not diminish the fact that the "porcelain composition" disclosed in claim 1 of each patent constitutes the final composition of the invention's product.

Accordingly, based on the plain language of the patents and the specifications' references to "wear" on "local dentition," and to "discomfort/irritation inside the oral cavity," the Court construes the leucite *61 crystal size limitation "not exceeding about 10 microns" in claim 1 of both the '791 and the '884 patents, as directed to the size of the leucite crystallites in the "final restoration," that is, the final dental porcelain composition created by the invention.

B. Anticipation

Defendants' first ask for summary judgment that the asserted claims of the '791 and '884 patents are invalid because they are "anticipated" under 35 U.S.C. § 102(b) by the issuance of the '366 Patent and the disclosure embodied in Example 2. Plaintiff argues that the '791 and '884 patents are distinguishable from the '366 Patent on the size of their leucite crystals, and that the Examiner who prosecuted the '884 Patent considered Example 2 of the '366 Patent.

On December 7, 1998, in the first Office Action taken on the application that matured into the '884 Patent [hereinafter " '884 Application"], the Examiner rejected claims 1-8, 12, and 16-19 [FN2] under 35 U.S.C. § 102(b) as being anticipated by, among others, the '366 Patent, stating that "[366] teach[es] the production of a porcelain composition including Leucite crystals having an exemplified crystallite size of 5 to 10 microns (see example 2) with a thermal expansion within the instant claims." The '366 Patent, issued on August 5, 1986, qualifies as an item of prior art under 35 U.S.C. § 102(b), and was cited as a prior art reference during the prosecution of both the '791 and the '884 patents. The '366 Patent directs various dental porcelain compositions, which blend various combinations of a "glassy phase matrix" and a "dispersed leucite phase." (Defs.' Ex. 6, '366 Patent.) While there is clearly dispute between the parties about the '366 Patent's overall readability on the '791 and '884 patents, there appears to be little dispute over the readability of Example 2 of the '366 Patent on each element of the asserted claims, except with regard to their respective limitations on the size of leucite

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crystals.

FN2. Plaintiff has asserted claims 1-8, 13-15, and 18 of the '884 Patent. These issued claims correspond to claims 1-8, 16-18, and 22, respectively, of the original application.

As set forth above, claim 1 of both the '791 and the '884 patents have the express limitation that the leucite crystallites "possess diameters not exceeding about 10 microns," a limitation which, based on the Court's construction of those claims above, refers to the size of the leucite crystallites in the final porcelain composition. Example 2 of the '366 Patent, teaches the blending of two "master frits", the first "doped" with 4 percent potassium nitrate and the second "doped" with 9 percent potassium nitrate, a substance that controls the amount of leucite crystals.

"Both of the master frits contained leucite in a 5 to 10 micron particle size range dispersed in the residual glassy phase ... A porcelain product was prepared from a mixture of equal parts of the first and second master frits. The Porcelain product, which had a fusion temperature of about 955 degrees C. exhibited a coefficient of thermal expansion which was intermediate that of the respective master frits."

(Defs.' Ex. 6, '366 Patent, Example 2, col. 9, lines 22-35.) Based on Example 2, Defendants argue that the '366 Patent teaches a *final* porcelain composition containing leucite crystals in the 5 to 10 micron range. Plaintiff's, however, claim that Example 2 of the '366 Patent teaches a blending of two glass-ceramic frits, which, *prior to heating*, contain leucite crystals in a 5 to 10 micron range. Plaintiff asserts that "it is well known in the ceramic arts that the *62 heating of such a mixture as described in Example 2 promotes growth of the leucite crystals." (Pl.'s Resp. to Defs.' Statement of Undisputed Facts & Pl.'s Statement of Additional Facts in Dispute [hereinafter "Pl.'s 9(c)(2)"] at 4-5.) The resulting porcelain composition taught by Example 2, Plaintiff contends, contains leucite crystals 2 to 50 microns in size, as taught by columns 4 and 7 of the '366 Patent.

Therefore, whether the "5 to 10 micron particle size" limitation set forth in Example 2 refers to the size of the leucite crystals in the final porcelain composition or their size prior to heating hinges on the factual question of whether the leucite crystals described in Example 2 will grow when heated to 955 degrees Celsius. Defendants' expert, Dr. Walker, opined that "at 955 degrees the leucite crystals will not grow," and that a temperature of 1150 degrees was necessary for growth. (Defs.' Ex. 7, Walker Test. at 122.) Both of Plaintiff's experts (and inventors of the '791 and '884 patents), however, opined that the leucite crystals, as described in Example 2, will grow at temperatures as low as 500 to 700 degrees. (Pl.'s Ex. 5(A), Panzera Test. at 78-80, 162-65; Pl.'s Ex. 5(C), Kaiser Test. at 83-84.)

[16] All patents are entitled to a presumption of validity under 35 U.S.C. § 282. A defendant must provide clear and convincing evidence of invalidity to overcome this presumption. See *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1358 (Fed.Cir.2001) ("To succeed with a summary judgment motion of invalidity ..., the movant must demonstrate a lack of genuine dispute about material facts and show that the facts not in dispute are clear and convincing in demonstrating invalidity."); *Union Oil Co. v. Atlantic Richfield Co.*, 208 F.3d 989, 994 (Fed.Cir.2000). "The presumption of validity under 35 U.S.C. § 282 carries with it the presumption that the Examiner did his duty and knew what claims he was allowing. Therefore, the challenger's burden is especially difficult when the prior art was before the PTO examiner during prosecution of the application." *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1323 (Fed.Cir.1999) (citations and quotations omitted); see also *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1467 (Fed.Cir.1990).

[17] "To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1346 (Fed.Cir.1999) (quoting *In re Schreiber*, 128 F.3d 1473, 1477 (Fed.Cir.1997)); *Electro Med. Sys. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1052

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(Fed.Cir.1994). "Anticipation of a patent claim requires a finding that the claim at issue 'reads on' a prior art reference," *Atlas*, 190 F.3d at 1346, and "is a question of fact, including whether or not an element is inherent in the prior art." *Id.*; *Union Oil Co.*, 208 F.3d at 994. "Specifically, when a patent claims a chemical composition in terms of ranges of elements, any single prior art reference that falls within each of the ranges anticipates the claim ..." "regardless of whether it also covers subject matter not in the prior art." *Atlas*, 190 F.3d at 1346. Therefore, in the context of anticipation defenses, the district court must "assess the meaning of the of the prior art references cited to support the validity challenge." *Amazon.com*, 239 F.3d at 1358. What a prior art reference teaches is a question of fact; therefore, "the district court necessarily makes fact-findings, explicitly or implicitly, concerning the meaning of the asserted references." *Id.*

[18] Both parties are now in agreement that the factual dispute over whether and to what extent the leucite crystals *63 taught by Example 2 will grow when heated constitutes a material factual issue sufficient to preclude summary judgment that the asserted claims of the '791 and '884 patents are invalid on the ground of anticipation. (Pl.'s 9(c)(2) at 9; Pl.'s Consolidated Opp'n to Defs.' Combined Mots. for Summ. J. & Cross Mot. for Partial Summ. J. for Infringement of the '884 Patent [hereinafter "Pl.'s Opp'n"] at 23; Defs.' Reply Mem. in Supp. of Defs.' Combined Mots. for Summ. J. and in Opp'n to Pl.'s Cross-Mot. for Summ. J. [hereinafter "Defs.' Reply"] at 10-11.) Accordingly, Defendants' motion for summary judgment on the claim of anticipation by the '366 patent is DENIED.

C. On-Sale Bar

Defendants next ask for summary judgment that the invention defined in the asserted claims of the '884 Patent is invalid under 35 U.S.C. § 102(b) because the subject matter disclosed therein was "on sale" in the United States more than one year prior to March 12, 1996, the effective filing date for the patent at issue. Plaintiff responds by arguing that 1) the alleged product was not "on-sale" prior to March 12, 1995, and 2) that the product, as allegedly

offered in 1995, was different than the product on sale today.

[19] Under 35 U.S.C. § 102(b) "A person shall be entitled to a patent unless---... (b) the invention was ... on sale in this country, more than one year prior to the date of the application for patent in the United States." To challenge a presumptively valid patent, an accused infringer must demonstrate by clear and convincing evidence that 1) there was a sale or offer to sell more than one year before the application for the subject patent, and 2) that the subject matter of the sale or offer to sell fully anticipated the claimed invention. *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041, 1045-46 (Fed. Cir.2001); *UMC Elecs. Co. v. United States*, 816 F.2d 647, 656 (Fed.Cir.1987).

1. Sale or Offer to Sell

Currently, Defendant Chemichl provides Defendant Dillon with a product called "LF-1-PFM", which Dillon repackages into smaller containers and resells under its trademark, Sensation, one of the two allegedly infringing products. There is no dispute that Sensation and LF-1-PFM are the same, and that the instructions for use of Sensation and the instructions for use of LF-1-PFM are the same.

In October of 1994, Chemichl shipped "LF-PFM" (later renamed "LF-1-PFM") samples, with instructions on its use, to J.F. Jelenko Co. ("Jelenko") in Armonk, NY. On October 10, 1994, in a telefax from Dan Johnson of Chemichl, to Rudy Michl of Chemichl AG, Johnson summarized a meeting he had had with Jelenko representatives regarding Jelenko's concerns with the "PBM system":

The most significant concern they have is with our pricing structure. They indicated to us that after a more thorough look at the current U.S. market ... [.] [t]hey feel that we would have to come down at least \$5-\$6 per ounce in order for them to feel comfortable selling our PFM product.

* * * * *

This discussion led us into the LF-PFM product. They wanted to know more about this ceramic

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and how it performed on the alloys they sent us in August.... They felt that if the product worked on their Prospector alloy ... then they could re-define the porcelain market and the price objection would be non-existent. The following morning, Rolf and I discovered from Egbert that our present LF-PFM ceramic worked on both metals *64 they sent ... After hearing this information, ... [t]hey gave us five ounces of Prospector ... for our technical department to do testing and wanted samples immediately for evaluation. They said they would begin a full blown marketing effort immediately upon confirmation of the product's performance.

(Pl.'s Ex. 30, Letter dated October 10, 1994, at 2.) On January 4, 1995, Johnson sent Dave Kasza of Jelenko a letter stating:

After more extensive experimentation, our developers believe it is possible to lower the firing temperature of our Low-Fusing ceramic and extend the hold time in order to fuse it to Prospector.... Since the hold time is substantially increased, I would like to know if the this project is still of interest and if you would like us to do additional testing.

(Pl.'s Ex. 13, Letter dated January 4, 1995.) Thereafter, on February 6, 1995, in another telefax from Johnson to Michl, Johnson summarized another conversation he had had with Jelenko representatives.

After a fairly lengthy conversation with both Dave Kasza and his ceramist, Frank Munzenmayer, they concluded that both our PFM opaque paste and our LF-PFM are not yet marketable in the U.S. for the following reasons:

* * * * *

LF-PFM

This they believe needs the most work. The handling characteristics as far as stacking is good, however, they experienced severe tearing. This is not checking, this is tearing (large crevices in the fired ceramic). They have had consistent tearing ... using our ceramic in conjunction with both Albacast and Suncast DFK. They have tried several techniques to overcome this problem, but have given up due to the sensitivity of the product. They are definitely interested in seeing

if our LF-PFM could be used in conjunction with Prospector despite the long hold time required. This would be the product of primary interest.

COMMENTS

Jelenko is not interested in creating a new market with our existing ceramic system. Their intention with our ceramic would be to go after the Ceraco users and cut into their opaque market share. If they can piggy-back our opaque paste with their top selling alloys, they would have a winner....

(Pl.'s Ex. 14, Letter dated February 6, 1995.)

In December of 1994, Chemichl also shipped LF-PFM samples and instructions to Dillon in North Attleboro, MA. On December 8, 1994, Johnson wrote to Kevin Dillon:

I enjoyed our phone conversation and am looking forward to the possibility of doing business in the future. Enclosed are samples of our two latest versions of porcelain-fused-to-metal-ceramic for your testing and evaluation....

(Defs.' Ex. 9, Letter dated December 8, 1994.) In January of 1995, Johnson wrote to Michl:

I enjoyed talking with you the other day. Sounds like some interesting things came out of your meeting with Kevin [Dillon].... I've thought of a few incidental items that we should stick to during our negotiations with him:

1. I think he should immediately give us a Non-Disclosure agreement.
2. A firm, ironclad contract based on a volume commitment, discounts (by way of free product) would only apply if the volumes are met.
3. The 50% margin should be a gross margin prior to any give away programs *65 or other miscellaneous expenses.
4. The audit should be done by our accountants....

(Pl.'s Ex. 31, Letter dated 1/23/95.) Also in January of 1995, Mr. Johnson requested that Michl give him the formulation for the LF-PFM product so that he could file the formula with the Food and Drug Administration under the pre-market notification guidelines to obtain approval for sale of the product. Johnson did not receive the formulation at this time.

In February of 1995, Chemichl distributed its "1995 Wholesale Price List", which included

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listings on its LF-PFM product, to various companies in the United States. For example, on February 6, 1995, Johnson wrote to Mark DeTorre of 3M:

Enclosed is our new 1995 Whole Sale Price List. This new price list includes the complete CHEMICHL product line and is designed to make it easier for you to order.... I want to point out our latest development in low-fusing ceramics shown on pages 14-18. We believe, with time, low fusing ceramics will ultimately replace existing traditional ceramics (see attached Argumentation-- LF-PFM)

(Defs.' Ex. 8, Letter dated February 6, 1995.)

Also in February of 1995, a "Secrecy and Non-disclosure Agreement" was executed by Chemichl and Dillon, whereby both parties agreed to protect each other's product and trade information. (Pl.'s Ex. 11, Michl Cross at 131; Pl.'s Ex. 53, Johnson Cross at 172; Pl.'s Ex. 58, Copy of unsigned Secrecy and Non-Disclosure Agreement.) In April of 1995, Chemichl sent additional LF-PFM samples to Dillon. (Defs.' Ex. 8, Proforma Invoice for Samples dated April 20, 1995.) In August of 1996, Johnson received the formula for the LF-1-PFM (formerly LF-PFM) product for filing with the FDA. The attached cover letter read:

Enclosed you will find a description of our "new" ceramic products and the composition of the basic glasses. The composition is confidential and only for the FDA....

(Pl.'s Ex. 35, Letter and Formula.) The first completed sale of the LF-1-PFM product occurred in August of 1996 between Chameleon Dental Products Inc. and Chemichl. (Pl.'s Ex. 38, Purchase Agreement.) In the fall of 1997, Dillon ordered commercial quantities of the LF-1-PFM product from Chemichl, and continues to do so today.

[20] "Whether a particular activity raises the on-sale bar is a question of law, based on underlying factual considerations." *Intel Corp. v. International Trade Comm.*, 946 F.2d 821, 829 (Fed.Cir.1991). The Supreme Court recently rejected the "totality of the circumstances" approach, previously employed by the Federal Circuit, for determining whether the on-sale bar

applies, and replaced it with a two-prong test: "First, the product must be the subject of a commercial offer for sale.... Second, the invention must be ready for patenting." *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67, 119 S.Ct. 304, 142 L.Ed.2d 261 (1998) (finding proof of acceptance of a purchase order prior to the critical date, and proof that inventor's drawings sent to manufacturer prior to the critical date fully disclosed the invention, sufficient to raise the on-sale bar); see also *Brasseler v. Stryker Sales Corp.*, 182 F.3d 888, 890 (Fed.Cir.1999) (quoting *Pfaff*, 525 U.S. at 67, 119 S.Ct. 304)).

In regard to the first prong, it is well established that "a single sale or offer to sell is enough to bar patentability," *In re Caveney*, 761 F.2d 671, 676 (Fed.Cir.1985). Moreover, "[i]t is not necessary that the *66 sale be consummated for the bar to operate ... no more than a firm offer to sell may be sufficient." *Buildex Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1464 (Fed.Cir.1988). However, "[u]nder longstanding judicial interpretation, a product embodying the patented invention, which is sold or offered for sale more than a year before the application's filing date, may escape the statutory bar where such sale was primarily for a bona fide experimental purpose to perfect the invention, rather than for commercial exploitation." *Paragon Podiatry Lab., Inc. v. KLM Lab., Inc.*, 984 F.2d 1182, 1185 (Fed.Cir.1993).

Although the Supreme Court in *Pfaff* did not elaborate on what it meant by a "commercial offer for sale", the Federal Circuit has since determined that "[a]pplying established concepts of contract law, rather than some more amorphous test, implements the broad goal of *Pfaff*, which, in replacing this court's 'totality of the circumstances' test with more precise requirements, was to bring greater certainty to the analysis of the on-sale bar." *Group One*, 254 F.3d 1041, 1047. Based upon this determination, the Federal Circuit held that "the question of whether an invention is the subject of a commercial offer for sale is a matter of Federal Circuit law," and that it will "look to the Uniform Commercial Code ('UCC') to define whether ... a communication or series of communications rises to

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the level of a commercial offer for sale." *Id.* at 1047. While the *Group One* court did not offer any specific guidance on what constitutes a commercial offer for sale, it did note that only an offer "which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under § 102(b)," and that "contract law traditionally recognizes that mere advertising and promoting of a product may be nothing more than an invitation for offers, while responding to such an invitation may itself be an offer." *Id.* at 1048 (citing *Restatement (Second) of Contracts* § 26 (1981)).

In regard to the second prong, the Supreme Court clearly held that the "ready for patenting" condition could be satisfied by "proof of reduction to practice before the critical date; or by proof that prior to the critical date, the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." *Pfaff*, 525 U.S. at 67, 119 S.Ct. 304. In so holding, the Court disposed of the "substantially complete" standard previously employed by the Federal Circuit, and determined that although the invention need not be reduced to practice, the concept of the invention must be fully complete. See *Pfaff*, 525 U.S. at 66, 119 S.Ct. 304; *Robotic Vision Sys., Inc. v. View Eng'g, Inc.*, 249 F.3d 1307, 1312 (Fed.Cir.2001) (interpreting *Pfaff*).

a. Commercial Offer for Sale

Here, the critical date under 35 U.S.C. § 102(b) is March 12, 1995, one year prior to the application filing date. There is no dispute that no actual sale was completed prior to the critical date. The activity that transpired prior to March 12, 1995, included the sending of samples and instructions to Jelenko and Dillon, and the distribution of price lists a few months later. The fact that the above activity transpired is not in dispute. The legal issue of whether the combination of these activities constituted a commercial offer for sale of a product ready for patenting, however, is contested and is dispositive here.

According to Defendants, these samples were sent

with the intent of procuring commercial orders, and they, in combination with the distribution of the 1995 Wholesale Price List in February, 1995, *67 constituted a firm offer for sale before the critical date. Jelenko ultimately declined to do business with Chemichl due to problems it perceived with the product, but Dillon, in the fall of 1997, ultimately placed orders with Chemichl for commercial quantities of the LF-PFM product, samples of which, according to defendants, had been sent to Dillon in 1994 and 1995.

In contrast, Plaintiff argues that the samples sent in 1994 and 1995 were for experimental purposes and did not constitute commercial offers for sale. Specifically, Plaintiff argues that Johnson's letter to Dillon stating "enclosed are samples ... for your testing and evaluation," Michl's Declaration stating that in February of 1995 he met with Jelenko representatives "to discuss the results of their testing and evaluation of the samples of the LF-PFM," Johnson's letter to Michl stating that according to Jelenko, the product was "unmarketable" and "needs more work," and the year and a half delay between Johnson's request for the formulation to file with the FDA and Chemichl AG's provision of such formula in August of 1996, establish the experimental nature of the 1994 and 1995 activity. Plaintiff asserts that these facts make clear that the samples sent to Jelenko and Dillon were for the purpose of determining the product's utility with respect to various methods and alloys, not for the purpose of a specific commercial sale.

[21] Applying the standards set forth above, the Court finds that, under the stricter standards set forth in *Pfaff* and its progeny, the activity that transpired prior to March 12, 1995 did not constitute a commercial offer for sale. The UCC does not define "offer," and, therefore, does not displace pre-code law as to what constitutes an offer. Accordingly, courts must look to the common law for the definition. See Ronald A. Anderson, 2 *Anderson on the Uniform Commercial Code* § 2-206:12 (3d ed.1997) (footnotes omitted). However, although neither *Pfaff* nor the UCC provide a clear definition of what constitutes a commercial offer, the authorities appear to be in

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agreement on certain business activities that do not constitute offers, but rather constitute invitations to make an offer.

Frequently, negotiations for a contract are begun between parties by general expressions of a willingness to enter into a bargain upon stated terms, and yet the natural construction of the words and the conduct of the parties is that they are inviting offers, or suggesting the terms of a possible future bargain, rather than making positive offers. This is especially likely to be true where the words in question are in the form of an advertisement, circular, catalog or the like. Thus, if goods are advertised at a certain price, it is generally not an offer, and no contract is formed by the statement of an intending purchaser that he will take a specified quantity of the goods at that price. Rather, the courts routinely hold that such advertisements or other expressions of intention are invitations to solicit offers or to enter into a bargain rather than offers themselves. Similarly, *a published price list is not an offer to sell the goods listed at the published prices ...*

The cases are legion on this point; and though they are grounded on various bases, including the absence of quantity terms, the absence of apparent intent to form a contract, or potentially unlimited liability of the offeror if an offer is held to exist, they all share two other common characteristics: first, in virtually all of the cases there is *the absence of a promissory undertaking*; and second, in all the cases a reasonable person receiving the communication has *68 reason to know, from the circumstances under which the manifestation is made, that no offer exists.

Richard A. Lord, 1 *Williston on Contracts* § 4.7, at 285-290 (4th ed.1990) (footnotes omitted) (emphasis added); *see also* Anderson, *supra*, § 2-206:15, at 20-21 ("An expression of intention that does not manifest a willingness to enter into a binding agreement on stated terms is, by definition, not an offer. Consequently, it is ordinarily held that an advertisement, a price quotation, or other invitation to negotiate, is not an offer." (footnotes omitted)).

Here, none of the letters contained quantity terms, price quotations, or delivery terms, and the

wholesale price list essentially amounted to a catalogue form of advertising. Moreover, no order form or other contractual instrument was contained in either the letters accompanying the samples or the price lists. Defendants' only evidence to the contrary is Michl's testimony that he distributed the samples "with the hope of procuring commercial sales." (Defs.' Ex. 8, Michl Decl. ¶ 8; Defs.' Ex. 9, Dillon Decl. ¶ 6). An inventor's attempted exploitation, however, "must be objectively manifested as a definite sale or offer to sell the invention. The subjective, uncommunicated, and ultimate intention of the offeror, however clear, is not alone sufficient." *Envirotech Corp. v. Westech Eng'g Inc.*, 904 F.2d 1571, 1575 (Fed.Cir.1990). Additionally, Plaintiff raises serious issues about Michl's credibility, elicited on cross-examination during the preliminary injunction hearing. (Pl.'s Ex. 5(D), Michl Cross at 43-47.)

Therefore, the Court finds that the combination of the samples, their accompanying letters, and distribution of the price lists constitutes invitations to offer or otherwise negotiate, specifically invitations to make offers to purchase a certain porcelain product at the prices listed; offers which Chemichl could then accept or reject. Accordingly, the Court concludes that Defendants have failed to show by clear and convincing evidence that, prior to March 12, 1995, a commercial offer for sale was made.

Because the Court finds that Defendants' activity falls short of a commercial offer for sale, the Court does not reach the second prong under *Pfaff* of whether the product was ready for patenting. Furthermore, because the Court finds that no offer for sale was made, the Court does not reach the issue of whether the LF-PFM product as offered in 1995 actually anticipated the '884 Patent. Defendants' motion for summary judgment under the on-sale bar is DENIED.

D. Infringement by Cerpress

Defendants' third request asks for summary judgment that Cerpress does not infringe any of the asserted claims. Specifically, Defendants claim that

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Cerpress does not literally infringe either of the patents because it does not contain lithium oxide (Li_2O), and that under the doctrine of prosecution history estoppel, Plaintiffs are precluded from establishing infringement under the doctrine of equivalents. In response, Plaintiff claims that the lithium oxide was added as a flux modifier to make the porcelain composition "operable," not as a limitation to distinguish claim 1 over prior art.

1. Literal Infringement

[22] Direct infringement occurs when a party "without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent." 35 U.S.C. § 271(a). To establish direct infringement, the patentee must prove by a preponderance of evidence that every element *69 of the asserted claim, as properly construed by the Court, is found in the accused device or process, either literally or under the doctrine of equivalents. See *Wolverine World Wide*, 38 F.3d at 1196; *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535 (Fed.Cir.1991). In this regard, each and every clause of a claimed invention is considered material and essential. See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). Therefore, the absence of even one element or its equivalent of a claimed invention places the accused device outside the coverage of the claims.

[23] There is no dispute that although Cerpress contains all of the physical parameters specified in claim 1 of both patents, i.e. the leucite crystal size, the amount of leucite crystals, the maturing temperature, and the coefficient of thermal expansion, Cerpress does not literally infringe either the '791 or the '884 patent because its chemical composition does not contain the Li_2O specified in claim 1 of both patents. The following chart shows a comparison of the chemical compositions:

	884 (wt. %)	791 (wt. %)	
Compound	Claim 1	Claim 1	Cerpress (wt. %)

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SiO ₂	58-65	57-66	59.2
Al ₂ O ₃	7-15	7-15	15.97 [FN3]
K ₂ O	7-15	7-15	10.22
Na ₂ O	7-12	7-12	9.31
Li ₂ O	0.5-3	0.5-3	.041
CaO	--	0-3	1.62
MgO	--	0-7	.020
F	--	0-4	.005
CeO ₂	--	0-1	.45
B ₂ O ₃	--	--	1.93
BaO	--	--	1.02

FN3. The amount of aluminum oxide contained in Cerpress, according to Plaintiff's expert, also falls outside the claimed range. The record, however, reveals conflicting evidence on the amount it contains. In fact, as the Federal Circuit noted on appeal, "each party's evidence undercuts its own infringement position." *Jeneric/Pentron*, 205 F.3d at 1383. Plaintiff's expert, as listed in the above chart, found 15.97% of aluminum oxide, an amount outside the 7-15 weight percentage range specified by the claim. Defendants' testing, on the other hand, found 14.98% of aluminum oxide, bringing the element inside the specified range. Therefore, the parties' position, on the relevance of this element and the discrepancy over the amount present in Cerpress, remains unclear.

('791 Patent; '884 Patent; Pl.'s Ex. 6(c), Sisson Decl.) Based on Sisson's testing, Plaintiff's own expert, Cerpress does not contain sufficient lithium oxide, an ingredient specifically required by every asserted claim of both patents. Accordingly, the Court finds that Cerpress does not literally infringe either the '791 or the '884 patent.

2. Doctrine of Equivalents

Plaintiff asserts that, despite the absence of literal infringement, Cerpress infringes the asserted claims

under the doctrine of equivalents. Defendants respond that based on amendments made during the prosecution of the '884 Patent, prosecution history estoppel applies to bar Plaintiff's use of the doctrine of equivalents to establish infringement.

a. Prosecution History of the '791 Patent

In an Office Action dated November 1, 1996, made in response to the '791 Application, the Examiner entered certain restrictions, and rejected claims 1-10 as being unpatentable over a prior art, U.S. Patent No. 4,101,330. (Pl.'s Ex. 1, '791 Patent File Wrapper.) On March 21, 1997, in a statement to the Examiner, Plaintiff/Applicant distinguished its invention from the prior art on the ground that the prior art employed a "mepheline syenite" glass matrix phase, as opposed to a feldspar glass matrix phase, making the prior art unsuitable for coating dental restorations, and on the ground that the leucite crystals in the prior art possessed diameters not exceeding *70 about 37 microns, whereas Plaintiff/Applicant's invention required leucite crystallites "not exceeding about 10 microns." ('791 Patent File Wrapper.) On March 27, 1997, the PTO issued a notice of allowability. No amendments were added, and more importantly, the element at issue was neither amended nor argued during prosecution of the patent.

b. Prosecution History of the '884 Patent

In addition to originally rejecting the '884

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Application as anticipated by the '366 Patent discussed above, the Examiner also rejected claims 1-7 and 16-19 as being anticipated by U.S. Patent No. 4,798,536 (Katz), claims 1-10 and 16-19 as being anticipated by U.S. Patent No. 5,698,019 (Frank et al.), claims 2-20 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention, and claims 1-19 for "obvious-type" double patenting in view of the '791 Patent. (Defs.' Ex. 13, '884 File Wrapper.)

On March 4, 1999, Plaintiff's attorneys, Leah Reimer and Michael Cantor, had a personal interview with the Examiner. The Examiner's Interview Summary indicates (via check mark) that all claims were discussed, that all identifications of prior art were discussed, and adds:

Applicants [sic] representative suggested incorporating claims [sic] 9 and silica amount of claim 13 which appears to put case in condition for allowance. All arguments will be reconsidered. 112, second paragraph in reference to 1 and 20 will be overcome with composition limitations.

('884 File Wrapper, 3/4/99 Summary Interview.) Further, the box indicating that "[i]t is not necessary for applicant to provide a separate record of the substance of the interview" was not checked. The notice under the box reads:

Unless the paragraph above has been checked to indicate to the contrary. A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. If a response to the last Office Action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

('884 File Wrapper, 3/4/99 Interview Summary (emphasis in original)).

On March 5, 1999, Plaintiff/Applicant filed an Amendment to the '884 Application, which amended certain claims, canceled certain claims, and added new claims. Significant here is the change to Claim 1:

Claim 1(original)

A porcelain composition comprising a leucite crystallite phase and a glass matrix phase, the improvement comprising:
the leucite crystallites possessing diameters not exceeding about 10 microns and representing from about 5 to about 65 weight percent of the porcelain composition.

Claim 1(amended)

A porcelain composition comprising a leucite crystallite phase and a glass matrix phase, [the improvement comprising:] the leucite crystallites possessing diameters not exceeding about 10 microns and representing from about 5 to about 65 weight percent of the porcelain composition, and wherein the fused(subsequently deleted) porcelain composition comprises:

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Compound	Weight %	Amount
SiO ₂	58-65	
Al ₂ O ₃	7-15	
K ₂ O	7-15	
Na ₂ O	7-12	
Li ₂ O	0.5-3	

*71 ('884 File Wrapper, Amendment A.) The explanation and argument accompanying this amendment stated that Plaintiff/Applicants:

believe that the amendments presented herein are in accord with the agreement reached at that interview. Applicant's [sic] have accordingly re-written claim 1 to incorporate certain of the limitations of claims 9 and 13, and added new dependent claims 21 and 22 in order to further define the invention. Claim 1 as amended is therefore allowable, as well as claims 2-8, 11, and 21-22, which are dependent thereon.

('884 File Wrapper, Amend. A.) On May 11, 1999 an additional telephone interview transpired between the Examiner and Plaintiff's counsel, resulting in a few additional changes. The application was formally allowed on May 12, 1999, and the '884 Patent issued on August 31, 1999. ('884 File Wrapper.)

On these facts, Plaintiff asserts under the doctrine of equivalents that the lithium oxide in the dental porcelain functions as a flux modifier, which works to regulate the viscosity of the porcelain and lower the fusion temperature and maturing temperature, thereby altering the amount of leucite crystals and affecting the coefficient of thermal expansion. Both Sisson, Plaintiff's expert, and Panzera, one of the inventors, opined that boron oxide (B₂O₃), barium oxide (BaO), and sodium oxide (Na₂O) are common substitutions for lithium oxide, and that the B₂O₃, BaO, and Na₂O contained in Cerpresso were present in sufficient amounts to achieve the effect of lithium oxide, that is, the right viscosity, maturing temperature, and fusion temperature to achieve porcelain having leucite crystals less than ten microns in size. (Pl.'s Ex. 6, Sisson Decl. ¶¶ 24-28.)

c. *Doctrine of Equivalents and Prosecution History Estoppel*

[24][25] When literal infringement cannot be established, infringement may be proven under the doctrine of equivalents. The Supreme Court recently made clear that infringement under the doctrine of equivalents must be established on an element by element basis, not by comparing the accused product or process to the invention as a whole. *See Warner-Jenkinson*, 520 U.S. at 29, 40, 117 S.Ct. 1040; *Litton Sys., Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1454 (Fed.Cir.1998). Infringement under the doctrine of equivalents is a question of fact. *Warner-Jenkinson*, 520 U.S. at 38, 117 S.Ct. 1040. Under the "all elements" rule, the operative question concerns whether "the accused product or process contains elements identical or equivalent to each claimed element of the patented invention." *Id.* at 29, 117 S.Ct. 1040; *accord Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1349 (Fed.Cir.1998). To prove infringement under the doctrine of equivalents, the accused product or process "must be shown to include an equivalent for each literally absent claim limitation." *See Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 1015 (Fed.Cir.1998); *Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 1474 (Fed.Cir.1998). To determine equivalency, "the role played by each element in the context of the claim will [] inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element." *Warner-Jenkinson*, 520 U.S. at 40, 117 S.Ct. 1040.

*72 [26][27] "Application of the doctrine of equivalents is the exception, however, not the rule."

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London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed.Cir.1991). The doctrine is not a license to ignore structural and functional limitations on which the public is entitled to rely in avoiding infringement. *See Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1582 (Fed.Cir.1996). Relevant here is the limitation called prosecution history estoppel, which "limits undue expansion of a claim's scope through the doctrine of equivalents." *Augustine Medical, Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1298 (Fed.Cir.1999). Specifically, "prosecution history estoppel prevents a patentee from recapturing subject matter surrendered during prosecution of the patent," *id.*; *see also Athletic Alternatives*, 73 F.3d at 1582, and it arises most frequently in the context of amendments added during the prosecution of a claim which narrow the scope of a claim. The application of prosecution history estoppel is a question of law for the court to decide. *See Augustine Medical*, 181 F.3d at 1298.

In *Warner-Jenkinson*, the Supreme Court held that prosecution history estoppel "continues to be available as a defense to infringement," and that its application to bar the doctrine of equivalents depended on the reason disclosed in the prosecution history for the amendment to the claims. *Warner-Jenkinson*, 520 U.S. at 40-41, 117 S.Ct. 1040; *see also Sextant Avionique v. Analog Devices, Inc.*, 172 F.3d 817, 827-28 (Fed.Cir.1999). In that case, an amendment was added to a claim limiting the range of pH level to between 6.0 and 9.0 in a purification process involving the ultrafiltration of dye. Based on the prosecution history, it was clear that the upper limit was added to distinguish the claim from a prior art operating at a pH level above 9.0. The reason for adding the lower limitation, however, was unclear from the prosecution history, and the patentee on appeal did not proffer a reason for the inclusion of a lower limit. Accordingly, the Supreme Court held that prosecution history estoppel applied and precluded the use of the doctrine of equivalents to establish that the accused product, operating at a pH level of 5.0, infringed the patent at issue. *See Warner-Jenkinson*, 520 U.S. at 32- 34, 117 S.Ct. 1040; *see also Sextant Avionique*, 172 F.3d at

827-28 (finding that despite fact that added limitation was not necessary to overcome the specified prior art rejection, because the prosecution history did not disclose a reason for the added term, the rebuttable presumption that the limitation was added for a reason related to patentability must apply thereby invoking prosecution history estoppel, and holding that patentee failed to rebut the presumption because his asserted reason for the added term was unsupported by and contrary to the prosecution history record).

In so holding, the Court established several guidelines for determining whether prosecution history estoppel applies. First, the Court found that if the amendments to the claim were "related to patentability," prosecution history estoppel applies. Specifically, the Court stated that, in its prior rulings, prosecution history estoppel had primarily been "tied to amendments made to avoid the prior art, or otherwise to address a specific concern--such as obviousness--that arguably would have rendered the claimed subject matter unpatentable." *Warner-Jenkinson*, 520 U.S. at 30-31, 117 S.Ct. 1040. If the claims were amended for a reason "unrelated to patentability", however, the Court determined that prosecution history estoppel generally does not apply. *Id.* at 30-33, 117 S.Ct. 1040; *see also Sextant Avionique*, 172 F.3d at 827-28.

*73 To establish the reason for an amendment required during the prosecution of a patent, the Supreme Court placed the burden on the patent holder. *See Warner-Jenkinson*, 520 U.S. at 33, 117 S.Ct. 1040. If the prosecution history record does not reveal the reason behind the amendment, and the patent holder is unable to otherwise establish a purpose unrelated to patentability, courts "should presume that the patent applicant had a substantial reason related to patentability for including the limiting element added by amendment," such that "prosecution history estoppel would bar the application of the doctrine of equivalents as to that element." *Id.* In support of this holding, the Court explained that the presumption "gives proper deference to the role of claims in defining an invention and providing public notice." *Id.*

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Recently, in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki, Co.*, 234 F.3d 558 (Fed.Cir.2000), cert. granted, 533 U.S. 915, 121 S.Ct. 2519, 150 L.Ed.2d 692 (2001), the Federal Circuit, set forth a process for analyzing the application of prosecution history estoppel in light of the Supreme Court's holding in *Warner-Jenkinson*:

The first step in a prosecution history estoppel analysis is to determine which claim elements are alleged to be met by equivalents. Then, the court must determine whether the elements at issue were amended during prosecution of the patent. If they were not, amendment-based estoppel will not bar the application of the doctrine of equivalents. However, the court still may need to consider whether statements made during prosecution give rise to argument-based estoppel. If the claim elements at issue were amended, the court first must determine whether the amendment narrowed the literal scope of the claim. If so, prosecution history estoppel will apply unless the patent holder establishes that the amendment was made for a purpose unrelated to patentability. If the patent holder fails to do so, prosecution history estoppel will bar the application of the doctrine of equivalents to that claim element...

In order to give due deference to public notice considerations under the *Warner-Jenkinson* framework, a patent holder seeking to establish the reason for an amendment must base his arguments solely upon the public record of the patent's prosecution, i.e., the patent's prosecution history. To hold otherwise--that is, to allow a patent holder to rely on evidence not in the public record to establish a reason for an amendment--would undermine the public notice function of the patent record. If the reasons for the amendment do not appear in the public record of the patent's prosecution, the reasons in most cases will be known only to the patent holder. We therefore hold that a narrowing amendment will give rise to prosecution history estoppel unless the prosecution history of the patent reveals that the amendment was made for a purpose unrelated to patentability concerns.

Festo, 234 F.3d at 586.

The facts in *Festo* are similar to ones at issue here. There, in response to the first Office Action, the patentee replaced claim 1 with a claim reciting a "magnetizable sleeve" element, and canceled another claim. Although the amendment was included in the submissions filed in response to the First Office action, the court determined that the addition of the "magnetizable sleeve" element was not itself responsive to the rejections set forth therein. Further, no statement in the prosecution history explained why the element was *74 included. The patentee argued that the amendment was made to "clarify" the claim, but the court found the assertion "inadequate to escape the *Warner-Jenkinson* presumption [] because nothing in the prosecution history of the [patent at issue] indicates that the magnetizable sleeve element was merely added for purposes of clarification unrelated to patentability concerns." *Festo*, 234 F.3d at 588. Accordingly, the court concluded that the patentee had failed to meet its burden, and, therefore, that prosecution history estoppel applied, barring the application of the doctrine of equivalents to that claimed element. See *id.*

In the context of this ruling, the *Festo* Court made several interpretive holdings in light of *Warner-Jenkinson*, one of which is relevant here.

For the purposes of determining whether an amendment gives rise to prosecution history estoppel, a "substantial reason related to patentability" is not limited to overcoming or avoiding prior art, but instead includes any reason which relates to the statutory requirements for a patent. Therefore, a narrowing amendment made for any reason related to the statutory requirements for a patent will give rise to prosecution history estoppel with respect to the amended claim element.

Festo, 234 F.3d at 566. The court found that although in *Warner-Jenkinson* the Supreme Court focused on claim amendments made to overcome prior art, "there are a number of statutory requirements that must be satisfied before a valid patent can issue and that thus relate to patentability," such as the novelty and non-obviousness requirements of 35 U.S.C. §§ 102 and 103, the patentable subject matter and

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usefulness requirements set forth in 35 U.S.C. § 101, and the specification, description, enablement, and particularity requirements set forth in the first and second paragraphs of 35 U.S.C. § 112. Because the Patent Office will reject a patent application that fails to satisfy any one of these statutory requirements, the Federal Circuit held that "an amendment related to anyone of these statutory requirements is an amendment made for 'a substantial reason related to patentability.'" *Festo*, 234 F.3d at 566-67.

d. Prosecution History Estoppel and the '884 Patent

[28] The reason behind the addition of lithium oxide in the amendment to claim 1 during the prosecution of the '884 Patent is the dispositive issue here. It is undisputed that lithium oxide was one of five chemical components added with precise ranges in response to the Examiner's rejections. Plaintiff claims, however, that although the lithium oxide component was included in the amendment, it was not necessary to distinguish the claim over prior art. According to Plaintiff, the '884 Patent was distinguished over the '366 Patent on the leucite crystal size, and was distinguished over the '536 and '019 patents on silica (SiO_2) and alumina (Al_2O_3) limitations. Plaintiff asserts that the fact that the 0.5-3% weight range of lithium oxide specified in the '884 Patent overlaps with the ranges in the prior art, at 0-2.5% in the '019 Patent and 1-5% in the '536 Patent, proves that the lithium oxide was not a distinguishing component in relation to prior art. The lithium oxide, according to Plaintiff, was added "to meet the requirement that the porcelain have a flux modifier to be operable," and thereby satisfy the "operative requirement of 35 U.S.C. § 112." (Pl.'s Opp'n at 38-39.) Plaintiff asserts that by adding the lithium oxide component, it only surrendered porcelain compositions without flux modifiers, it did not surrender porcelain compositions employing *75 any flux modifiers other than lithium oxide.

Plaintiff's arguments were made based on its interpretation of the Supreme Court's ruling in *Warner-Jenkinson*, prior to the Federal Circuit's

ruling in *Festo*. Although there may have been a debate under *Warner-Jenkinson* over whether Plaintiff's stated reason was related to patentability in such a way as to raise the prosecution history estoppel bar, the Federal Circuit's opinion in *Festo* makes clear that any reason related to patentability is sufficient to raise the bar, and specifically included § 112 as an example. See *Festo*, 234 F.3d at 566-67. Under these standards, the Court finds that prosecution history estoppel applies to bar Plaintiff's use of the doctrine of equivalents against the lithium oxide element in the '884 Patent.

The prosecution history record does not state any specific reason for the addition of the lithium oxide. As set forth above, the Examiner's 3/4/99 Interview Summary states that Plaintiff/Applicant suggested "incorporating claims [sic] 9 and the silica amount of claim 13" to "put the case in condition for allowance", and indicates that § 112, second paragraph, in relation to claim 1 will "be overcome with composition limitations." ('884 File Wrapper, 3/4/99 Interview Summary.) Plaintiff's statement accompanying the amendment is no more specific in regard to the lithium oxide, and merely states that the amendments "are in accord with the agreement reached at the interview," and that "certain of the limitations of claims 9 and 13" were incorporated, thereby making claim 1 "allowable." [FN4] ('884 File Wrapper, Amendment A.)

FN4. Plaintiff also relies on the declarations of Reimer and Cantor regarding the substance of the 3/4/99 interview with the Examiner to support its claim that the amendment is in accord with the "agreement reached at the interview," including the fact that the lithium oxide was simply added as a representative flux modifier, and, therefore, that during prosecution of the patent, Plaintiff only surrendered like dental porcelain compositions without flux modifiers. The written prosecution history record, however, is devoid of any memorialization of such "agreement," and the Court agrees with Defendants that its assessment must primarily be based on the written record.

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The Code of Federal Regulations makes clear that "action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation or understanding in relation to which there is disagreement or doubt." 37 C.F.R. § 1.2. Moreover, section 1.133(b) provides that "in every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant." 37 C.F.R. § 1.133(b). These regulations are consistent with the Federal Circuit's holding that "to give due deference to public notice considerations under the *Warner-Jenkinson* framework, a patent holder seeking to establish the reason for an amendment must base his arguments solely upon the public record of the patent's prosecution, i.e., the patent's prosecution history.... We therefore hold that a narrowing amendment will give rise to prosecution history estoppel unless the prosecution history of the patent reveals that the amendment was made for a purpose unrelated to patentability concerns." *Festo*, 234 F.3d at 586. Accordingly, the Court finds that the declarations of Reimer and Cantor regarding the substance of the 3/4/99 interview are an improper source of evidence to establish the reason behind the amendment because they are not part of the public record.

Under *Warner-Jenkinson*, it is Plaintiff's burden to establish the reason behind the amendment. Here, the prosecution history record does not make clear the specific reason for the addition of lithium oxide. Lithium oxide, at the level ultimately disclosed, was one of the ingredients in the original claim 9. Therefore, based on the written record, we only know, *76 based on Plaintiff's explanation, that it was added, like the rest of the ingredients, to make claim 1 "allowable," and, based on the Examiner's

summary, that it was possibly added as a compositional limitation "to overcome § 112". While it appears clear, based on its overlap with the '536 and '019 patents' ranges, that the lithium oxide was not necessary to distinguish claim 1 over prior art, it is by no means clear that the element was "unrelated to patentability." Based on the record alone, therefore, the presumption of relatedness would apply because nothing in the prosecution history record itself indicates that the lithium oxide was added for anything other than patentability. Moreover, Plaintiff's explanation that it was added "to meet the operability requirement," rather than supporting Plaintiff's position, actually undercuts its argument and reinforces the component's relatedness to patentability under *Festo*.

In sum, although it appears that the lithium oxide was not necessary to distinguish the patent over prior art, the specific reason for its addition remains unclear. Therefore, the presumption that the addition of lithium oxide was related to patentability applies, barring Plaintiff's use of the doctrine of equivalents against the lithium oxide element to establish infringement. Accordingly, because the accused product does not contain elements identical to each claimed element of the '884 Patent, the Court finds as a matter of law that Cerppress does not infringe claim 1 of the '884 patent or any other asserted claim dependent thereon. Defendants' motion for summary judgment that Cerppress does not infringe the '884 Patent is GRANTED.

e. Prosecution History Estoppel and the '791 Patent

In contrast to the '884 Patent, the lithium oxide present in the '791 Patent was an original part of the claimed invention in the '791 Application, and no amendments were ultimately necessary to allow issuance of the '791 Patent. In these circumstances, "amendment-based estoppel will not bar the application of the doctrine of equivalents," *Festo*, 234 F.3d at 586, and the Court finds that none of the statements made during prosecution of the '791 Patent surrendered subject matter related to the lithium oxide element that would give rise to argument-based estoppel.

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Defendants, however, claim that because the '791 and '884 patent are related under 35 U.S.C. § 120, any estoppel affecting the '884 Patent also affects the '791 Patent. Defendants base their argument on a Federal Circuit case indicating that "the prosecution history of a *parent* application may limit the scope of a *later* application using the same claim term." *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1300 (Fed.Cir.1999) (emphasis added) (finding that claim amendments regarding the "self-erecting" limitation made during prosecution of the parent application restricted the scope of the claims in each of the later issued child patents containing that term); *see also Jonsson v. Stanley Works*, 903 F.2d 812, 818 (Fed.Cir.1990) (finding that because the patent at issue was the result of a "continuation-in-part" application from a prior application and patent, the prosecution history of the earlier patent regarding the construction of a certain term was relevant to an understanding of that same term in the later patent). Defendants also cite to a district court case which, relying on *Augustine Medical*, found that, despite the fact that the patent at issue was unrelated (i.e.independent) to the prior patent, because plaintiff used "the claimed element to distinguish over the prior art and that claim term is common to the claims of both patents, prosecution history may disavow structures in the scope of the claims in *77 both patents." *Depuy Orthopaedics Inc. v. Androphy*, 2000 WL 297814, *8 (N.D.Ill.2000). In both *Augustine Medical* and *Depuy Orthopaedics*, the respective courts determined that the prosecution history of a *prior* application may limit a *later* application using the same claim term.

[29] Here, however, the situation is reversed. Defendants ask the Court to impose claim limitations arising in the prosecution history of a "child" (i.e. later) patent to an element in the "grandparent" (i.e. prior) patent. The original claim 1 of the '884 Application was very broad and did not contain any specific chemical components and ranges. Upon the Examiner's rejection, Plaintiff amended the claim by introducing certain ingredients within precise ranges--ingredients and ranges which are common to both patents. Therefore, according to Defendants, the principal

that the prosecution histories of related patents may affect each other is the same, regardless of the converse positions of the patents here.

Defendants, however, cite to no authority, and the Court finds none, for the proposition that just as the prosecution history of an earlier patent may limit a claim using the same term in a later related patent, so may the prosecution history of a later patent reach back and limit a claim using the same element in an earlier related patent. The Court finds this proposition implausible, especially where a defendant is attempting to use this principal as a vehicle to apply prosecution history estoppel to an element that was an original part of a prior patent and that was never amended or argued. Accordingly, the Court finds that prosecution history estoppel does not apply to the lithium oxide component in the '791 Patent, and, therefore, Plaintiff is not precluded from using the doctrine of equivalents to establish infringement.

[30] In regard to infringement by Cerpress of the '791 Patent under the doctrine of equivalents, this Court, in its preliminary injunction ruling, "avoided" the equivalency analysis on the ground that because Plaintiff had only asserted equivalency in regard to one of the two elements in Cerpress whose weight percentage fell outside the specified range in the '791 Patent, the *Warner-Jenkinson* "all-elements" test precluded a finding of infringement. On appeal, although the Federal Circuit upheld the Court's denial of a preliminary injunction, it found that "[t]his analysis does not resolve infringement by equivalents" because 1) "the record reveals conflicting evidence on the amount of aluminum oxide that Cerpress contains" with each parties' evidence undercutting its own infringement position, [FN5] and 2) in regard to the factual issue of the substitution of flux modifiers for lithium oxide, the "preliminary record discloses several issues for resolution during trial." [FN6] *78*Jeneric/Pentron*, 205 F.3d at 1383-84. Upon thorough review, the Court agrees that material factual issues exist regarding the elements of aluminum oxide and lithium oxide, sufficient to preclude summary judgment. Accordingly, Defendants' request for summary judgment that

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Cerpress does not infringe the '791 Patent under the doctrine of equivalents is DENIED.

FN5. "A comparison table ... prepared by Jeneric's expert ... states that Cerpress contains 15.97% of aluminum oxide However, ... Dillon's own technical expert and owner of Chemichl AG admitted that Cerpress contains 15.1% of aluminum oxide with a tolerance of +/-0.1%.... Moreover, [Dillon's] testing results ... show that Cerpress contains 14.98% of aluminum oxide. Therefore, the record facts do not resolve the question of Cerpress's literal infringement of the aluminum oxide limitation." *Jeneric/Pentron*, 205 F.3d at 1383-84.

FN6. "For instance, the Sisson Table [Plaintiff's testing] shows that Cerpress contains 0.041% of lithium oxide, outside the claimed 0.5-3%. A full record will show whether this difference is insubstantial. Also, Jeneric argues that the district court must consider evidence that barium oxide ..., boron oxide ..., and sodium oxide ... can act as fluxes and substitutes for lithium oxide. Dillon does not dispute that these compounds were known to function as fluxes. However, questions on the quantities necessary to substitute for lithium oxide require further factual development." *Jeneric/Pentron*, 205 F.3d at 1384.

E. Fraud

Defendants' fourth and final ground for summary judgment claims that the '884 Patent should be found invalid because Plaintiff engaged in inequitable conduct during the prosecution of the '884 Patent and thereby perpetrated a fraud on the PTO. Defendants' claim centers on Plaintiff's admitted failure to disclose the "Final Product" calculations in connection to Example 2 of the '366 Patent, and Plaintiff's alleged misrepresentations regarding the properties of the LF-1-PFM product allegedly on-sale prior to the critical date. Plaintiff

vigorously denies these allegations of deceit, calling Defendants' assertions frivolous.

On March 5, 1999, during the prosecution of the '884 Patent, Leah Reimer, Plaintiff's counsel, filed an "Information Disclosure Statement" (IDS) pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98, and attached a "Declaration" of Dr. Richard D. Sisson, (the same expert who had submitted a declaration and testified during the original litigation over the '791 Patent), dated February 23, 1999 [hereinafter "Sisson Declaration"], pursuant to 37 C.F.R. § 1.132. The IDS disclosed that Plaintiff/Applicant was party to litigation against Defendants in a patent infringement action concerning the '791 Patent, and that during the course of that litigation, Defendant Chemichl asserted that more than one year prior to the filing date of the '884 Application, it distributed a dental porcelain product in the United States called LF-1-PFM which has a chemical composition within the weight ranges of the '884 Patent, and has leucite crystals with diameters of less than 10 microns. ('884 Patent File Wrapper, 2/23/99 IDS at 1-2.) Plaintiff/Applicant's IDS included a copy of Defendant Chemichl's 1995 Wholesale Price List of Dental Ceramics and Related Laboratory Products, and specifically directed the Examiner to the page and paragraph in the materials where Chemichl described its ceramic systems as having "an average leucite crystal dimension of 3 microns." (*Id.* at 2.) The IDS then disclosed that Plaintiff/Applicant had retained Dr. Sisson to evaluate the LF-1-PFM product as it existed in 1995, and reported that Dr. Sisson had determined that the product, as distributed in 1995, did not exhibit crystallites with diameters not exceeding about 10 microns. (*Id.*)

The Sisson Declaration disclosed that he had been retained by Plaintiff/Applicant in connection with the litigation over the '791 Patent, and that he had "studied" and "compared" the 1995 micrographs of the LF-1-PFM product with micrographs of Plaintiff's invention. The Sisson Declaration opined that "the LF-1-PFM product of Chemichl, Inc., as distributed in 1995, does not exhibit leucite crystals wherein the leucite crystallites possess diameters not exceeding about ten microns." ('884 Patent File Wrapper, Sisson Declaration at ¶ 9.)

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[31] Under 37 C.F.R. § 1.56(d), "[a]pplicants have a duty to prosecute patent applications in the PTO with candor, good faith, and honesty." *Li Second Family, Ltd. v. Toshiba Corp.*, 231 F.3d 1373, 1378 (Fed.Cir.2000); *see also *79Molins, PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed.Cir.1995). "Inequitable conduct includes affirmative misrepresentations of material facts, failure to disclose material information, or submission of false material information, coupled with an intent to deceive." *Baxter Int'l, Inc. v. McGaw, Inc.*, 149 F.3d 1321, 1327 (Fed.Cir.1998); *see also Molins*, 48 F.3d at 1178. A party asserting an inequitable conduct defense must show by clear and convincing evidence that the alleged misrepresentation or nondisclosure occurred, that the misrepresentation or nondisclosure was material, and that the patent applicant acted with the intent to deceive the PTO. *See Li Second Family*, 231 F.3d at 1378. Determination of inequitable conduct requires a two step analysis by the court about whether the alleged conduct meets the threshold levels of materiality and intent. *See Baxter Int'l*, 149 F.3d at 1327. "The more material the omission or misrepresentation, the lower the level of intent required to establish inequitable conduct, and vice versa." *See Critikon, Inc. v. Becton Dickinson Vascular Access*, 120 F.3d 1253, 1256 (Fed.Cir.1997).

[32] Materiality of information is measured by whether " 'there is a substantial likelihood that a reasonable examiner would have considered the information important in deciding whether to allow the application to issue as a patent.' " *Li Second Family*, 231 F.3d at 1379 (quoting *Halliburton Co. v. Schlumberger Tech. Corp.*, 925 F.2d 1435, 1440 (Fed.Cir.1991)). "Direct evidence of intent or proof of deliberate scheming is rarely available in instances of inequitable conduct, but intent may be inferred from the surrounding circumstances." *Critikon, Inc.*, 120 F.3d at 1256 (finding that failure to disclose a prior art, which applicant should have known was material, and failure to disclose related ongoing litigation sufficient to infer an intent to mislead where no good faith explanation was offered); *see also Paragon Podiatry Lab., Inc. v. KLM Lab., Inc.*, 984 F.2d 1182, 1193

(Fed.Cir.1993) (holding that "[a]bsent explanation, the evidence of a knowing failure to disclose sales that bear all the earmarks of commercialization reasonably supports an inference that the inventor's attorney intended to mislead the PTO"). The Federal Circuit has instructed, however, that it "will not hold unenforceable a patent once granted in the absence of an intent to mislead, although the nondisclosure of facts of which the applicant should have known the materiality may justify an inference of intent to mislead in appropriate cases." *Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1421 (Fed.Cir.1988).

[33] Here, Defendants' allegations of inequitable conduct rely primarily on Plaintiff's failure to provide the Examiner with the "Final Product" calculations from Example 2 of the '366 Patent that Defendants generated in connection with the '791 Patent litigation ongoing at the time, and on Plaintiff's allegedly inconsistent statements and submissions regarding the LF-1-PFM product and its alleged sale. Although many courts have found inequitable conduct for failure to disclose material prior art, *see e.g., Elk Corp. v. GAF Bldg. Materials Corp.*, 168 F.3d 28, 32 (Fed.Cir.1999); *Critikon, Inc.*, 120 F.3d at 1256, the facts here are clearly distinguishable. Plaintiff disclosed the '366 Patent to the Examiner as prior art; it is only calculations inherent in Example 2 of the '366 Patent that went "undisclosed." On this point, the Federal Circuit is clear that, when a disclosure of prior art has been made, the content of such patent is presumed to be before the examiner. *See In re Portola Packaging, Inc.*, 110 F.3d 786, 790 (Fed.Cir.1997). The calculations embodied in the '366 Patent, therefore, *80 were presumed to be before the Examiner. Furthermore, the Examiner's initial rejection over the '366 Patent was due to the overlapping size of the leucite crystals, not the relative weight percentages of specific components. Based upon this rejection, and on the facts detailed above under Defendants' anticipation claim, Plaintiff asserts that it believed the leucite crystal size to be the distinguishing element between the '366 Patent and its own invention, and, therefore, did not believe that disclosure of the chemical composition inherent in Example 2 constituted material information.

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In sum, it is undisputed that Plaintiff disclosed the '366 Patent to the Examiner, that it disclosed the ongoing litigation regarding the '791 Patent, that it disclosed the literature regarding the alleged prior sale, and that it directed the Examiner to the place in the materials indicating an overlap of invention. The Federal Circuit has set a relatively high standard for proof of inequitable conduct, and cautioned attorneys not to abuse the use of this defense when representing their clients.

[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague. Reputable lawyers seem to feel compelled to make the charge against other reputable lawyers on the slenderest grounds, to represent their client's interests adequately, perhaps. They get anywhere with the accusation in but a small percentage of the cases, but such charges are not inconsequential on that account. They destroy the respect for one another's integrity, for being fellow members of an honorable profession, that used to make the bar a valuable help to the courts in making a sound disposition of their cases, and to sustain the good name of the bar itself. A patent litigant should be made to feel, therefore, that an unsupported charge of "inequitable conduct in the Patent Office" is a negative contribution to the rightful administration of justice. The charge was formerly known as "fraud on the Patent Office," a more pejorative term, but the change of name does not make the thing itself smell any sweeter. Even after complete testimony the court should find inequitable conduct only if shown by clear and convincing evidence. A summary judgment that a reputable attorney has been guilty of inequitable conduct, over his denials, ought to be, and can properly be, rare indeed.

Burlington Industries, Inc. v. Dayco Corp., 849 F.2d 1418, 1422 (Fed.Cir.1988).

Reading the evidence in the light most favorable to Plaintiff, Defendants have failed to meet this standard. This undisputed evidence does not support an inference of intent to deceive sufficient to eliminate any triable issue of fact. The evidence on the motion is, in the Court's view, consistent with the innocent assumption of knowledge and a

genuine belief by Plaintiff that its product did not overlap with prior art. A determination of whether Plaintiff's attorneys actually withheld information in bad faith will require a careful and thorough examination into their actions and intentions at the time--examination which is only appropriate for trial. Accordingly, Defendants' motion for summary judgment that the '884 Patent is invalid due to inequitable conduct is DENIED.

F. Plaintiff's Motion for Partial Summary Judgment

In response to Defendants' combined motions for summary judgment, Plaintiff cross moves for partial summary judgment that Sensation infringes claim 1 of the '884 Patent. Although the Court has denied each of Defendants' motions for summary *81 judgment as they pertain to Sensation and the '884 Patent, material factual issues exist with regard to at least Defendants' anticipation and inequitable conduct defenses. If resolved in Defendants' favor at trial, either of these defenses could defeat Plaintiff's claim of infringement. Therefore, material factual disputes in connection with at least two of Defendants' affirmative defenses make summary judgment on Plaintiff's claim of infringement inappropriate at this time. Accordingly, Plaintiff's cross motion for partial summary judgment that Sensation infringes the '884 Patent is DENIED.

V. CONCLUSION

In sum, the Court adheres to its prior construction of claim 1 of the '791 Patent as being limited to the exact weight percentage ranges for its chemical components; the Court construes the leucite crystal size limitation "not exceeding about 10 microns" in claim 1 of both the '791 and the '884 patents as directed to the size of the leucite crystallites in the "final restoration," that is, the final dental porcelain composition created by the invention; the Court denies Defendants' motion for summary judgment on the ground of anticipation by the '366 patent based on factual disputes; the Court denies Defendants' motion for summary judgment under the on-sale bar as a matter of law; the Court grants in part and denies in part Defendants' request for summary judgment that Cerpress does not infringe

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any asserted claim (finding that Cerpress does not literally infringe either the '791 or the '884 patent, and that Cerpress does not infringe the '884 Patent under the doctrine of equivalents, but that factual issues exist regarding whether Cerpress infringes the '791 Patent under the doctrine of equivalents); the Court denies Defendants' motion for summary judgment that the '884 Patent is invalid due to inequitable conduct based on material factual issues; and the Court denies Plaintiff's cross motion for partial summary judgment that Sensation infringes the '884 Patent based on material factual issues surrounding Defendants' defenses to that claim.

Accordingly, Defendants' combined motions for summary judgment [doc. no. 84] are GRANTED IN PART AND DENIED IN PART, and Plaintiff's cross-motion for partial summary judgment [doc. no. 92] is DENIED.

SO ORDERED

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Motions, Pleadings and Filings (Back to top)

- 3:98CV00818 (Docket)
(May. 01, 1998)

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DIAOPU

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

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JENERIC/PENTRON, INC. :
Plaintiff :
v. : U.S. DISTRICT COURT
: NEW HAVEN, CONN.
DILLON COMPANY, INC., : No. 3:98cv818 (EBB) - Lead
CHEMICHL INC., and : No. 3:99cv1775 (EBB)
CHEMICHL AG, :
Defendants :

Ruling on Defendants' Motion for Judgment as a Matter of Law

Defendants' Dillon Company, Inc., Chemichl Inc., and Chemichl AG move for judgment as a matter of law with respect to a jury's verdict (1) that Dillon's Sensation product infringes claims 1 and 2 of United States Patent Number 5,653,791 under the doctrine of equivalents; (2) that Dillon's Cerpress product infringes claims 1 and 2 of United States Patent Number 5,653,791 under the doctrine of equivalents; (3) that the Defendants are liable for the alleged infringement; and (4) that the asserted claims of Plaintiff's United States Patents 5,653,791 and 5,944,884 are not "anticipated" by the prior art of United States Patent 4,604,366. Because the Court finds that there was a legally sufficient evidentiary basis for a reasonable jury to find for the Plaintiff on these issues, the Defendants' motion is denied.

I. BACKGROUND

Jeneric/Pentron, Inc. ("Jeneric" or "Plaintiff") brought this patent infringement action against Dillon Company, Inc.,

Chemichl Inc., and Chemichl AG. ("Defendants"). Jeneric claimed that Dillon's Cerpress SL and Sensation SL products infringe two of Jeneric's patents, United States Patent Number 5,653,791 (the "'791 Patent") and United States Patent Number 5,944,884 ("the '884 Patent"). Defendants denied that those products infringe Jeneric's patents and countered that Jeneric's patents were anticipated by a third patent, United States Patent 4,604,366 ("the '366 Patent"), as well as the prior public use of LF-1-PFM, which Dillon now repackages and sells as Cerpress and Sensation.

After a four-day trial beginning on May 20, 2002, a jury concluded that Cerpress and Sensation did infringe certain claims of both the '791 and '884 Patents and that those patents were not anticipated by the '366 Patent; however, the jury also found that the '791 and '884 Patents were anticipated by the public use of LF-PFM prior to March 12, 1995. Defendants now move under Rule 50(b) of the Federal Rules of Civil Procedure for judgment as a matter of law ("JMOL"): (1) that Sensation does not infringe claim 1 or 2 of the '791 Patent under the doctrine of equivalents; (2) that Cerpress does not infringe claim 1 or 2 of the '791 patent under the doctrine of equivalents; (3) that none of the Defendants have any possible liability for the alleged infringement; and (4) that Defendants have proven, by clear and convincing evidence, that the asserted claims of the '791 and '884 patents are "anticipated" by the prior art '366 patent.

II. STANDARD OF REVIEW

"The grant of a motion for JMOL is permissible only when 'there is no legally sufficient basis for a jury to find for [the non-moving] party.'" Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1269 (Fed. Cir. 1999) (quoting FED. R. CIV. P. 50(a)(1)). "In order to determine whether a legally sufficient basis in fact exists, 'the trial court must consider all the evidence in a light most favorable to the non-mover, must draw reasonable inferences favorable to the non-mover, must not determine the credibility of the witnesses, and must not substitute its choice for that of the jury.'" Id. (quoting Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984)). The motion for JMOL must be denied if substantial evidence, the minimum quantum of evidence from which a jury might reasonably grant relief, exists to support the jury's verdict. Id. (citing Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 249-50 (1986)).

III. DISCUSSION

A. Infringement by Cerpress Under the Doctrine of Equivalents

The Defendants first argue that the jury should have found that Cerpress does not infringe either claim 1 or 2 of the '791 Patent under the doctrine of equivalents. While literal infringement requires the patent holder to prove that the alleged infringing device contains each limitation of the asserted claim, infringement under the doctrine of equivalents requires that the

patent holder demonstrate that the alleged infringing device contains an equivalent for each limitation not literally satisfied. See Catalina Mktg. Int'l v. Coolsavings.com, Inc., 289 F.3d 801, 812 (Fed. Cir. 2002) (citations omitted). "A determination of infringement, whether literal or under the doctrine of equivalents, is a question of fact." Id. (citing Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998)). The Court concludes that substantial factual evidence exists to support the jury's verdict that Cerpress infringes claims 1 and 2 of the '791 Patent under the doctrine of equivalents.

The jury heard evidence from both Parties that supported its conclusion. Dr. Rudolf Michl ("Dr. Michl"), owner of Chemichl AG, admitted that the only difference between claim 1 of the '791 Patent and the Cerpress product was the amount of lithium oxide. Defendant's expert witness, Dr. William Walker ("Dr. Walker"), stated that barium, boron and sodium oxides would be logical choices as substitutes for lithium oxide. Dr. Richard Sisson ("Dr. Sisson"), the Plaintiff's expert witness, opined that the substituted flux modifiers were present in Cerpress in such quantities as to regulate the flux in the porcelain in the same manner as lithium oxide. This evidence was sufficient to convince a reasonable juror of infringement under the doctrine of equivalents.

The Defendants argue that having disclosed "flux," while only claiming lithium oxide, Plaintiff cannot now invoke the

doctrine of equivalents to extend its lithium oxide limitation to encompass any other flux. In support of this argument, Defendants cite to the Federal Circuit's decision in Sage Prods. Inc. v. Devon Indus., Inc., 126 F.3d 1420 (Fed. Cir. 1997), which stands for the proposition that a patentee who has deliberately claimed narrowly may not later expand his claims through application of the doctrine of equivalents to capture equivalents that were foreseeable at the time he filed his application.

On this point the Court defers to the Federal Circuit's prior decision in this case. In its ruling on Jeneric's appeal of this Court's denial of Jeneric's motion for a preliminary injunction, the Federal Circuit stated:

This court merely notes that this preliminary record discloses several issues for resolution during trial. For instance, the Sisson Table shows that Cerpress contains 0.041% of lithium oxide, outside the claimed 0.5-3%. A full record will show whether that difference is insubstantial. Also, Jeneric argues that the district court must consider evidence that barium oxide (1.02% of BaO), boron oxide (1.95% of B₂O₃), and sodium oxide (Na₂O) can act as fluxes and substitutes for lithium oxide. Dillon does not dispute that these compounds were known to function as fluxes. However, questions on the quantities necessary to substitute for lithium oxide require further factual development.

Jeneric/Pentron, Inc. v. Dillon Company, Inc., 205 F.3d 1377, 1384 (Fed. Cir. 2000). The Court doubts that the Federal Circuit would have noted that Jeneric's flux equivalency argument remained as one of the issues to be decided at trial if Jeneric was prevented from asserting this equivalency argument as a matter of law.

B. Infringement by Sensation Under the Doctrine of Equivalents

The Defendants next claim that the jury should have concluded that Sensation does not infringe either claim 1 or 2 of the '791 Patent under the doctrine of equivalents. Defendants argue that "whether made in the context of literal infringement or infringement on the doctrine of equivalents, Plaintiff's argument that it can somehow apportion the amount of CeO₂ according to functions which are simply not recited in the claim, should have been precluded as a matter of law." Def.'s Post-Trial Submission at 9. Sensation contains 1.61% cerium oxide, while Claim 1 of the '791 Patent specifies 0-1% cerium oxide. The Federal Circuit previously rejected Jeneric's attempt to carve out a portion of cerium oxide according to functions not recited in the claim and upheld this Court's determination that Jeneric had not shown a reasonable likelihood of success on literal infringement by Sensation.

The Federal Circuit did not deal with the issue of whether Sensation infringed the '791 Patent under the doctrine of equivalents and this Court allowed Jeneric to proceed with its case that the difference between the amount of cerium oxide in Sensation and the amount in Claim 1 of the '791 Patent is insubstantial. This Court concluded that while Jeneric could not carve out portions of cerium oxide to make Sensation fall within precise ranges and "literally" infringe the '791 Patent, Jeneric should be permitted to show that the amount of cerium oxide in

Sensation was equivalent to the amount in Claim 1 of the '791 Patent because it performed the same function, in the same manner, to achieve the same end result.

The doctrine of equivalents requires that the accused product contain each limitation of the claim or its equivalent. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 40 (1997). An element in the accused product is equivalent to a claim element if the differences between the two are insubstantial to one of ordinary skill in the art. See Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1517 (Fed. Cir. 1995) (en banc), rev'd on other grounds, 520 U.S. 17 (1997). The jury heard testimony that the sole difference between Sensation and Claim 1 of the '791 Patent was the amount of cerium oxide. Dr. Sisson testified that sufficient amounts of cerium oxide in Sensation were used as an opacifying agent such that the difference between the amount of cerium oxide in that product and the amount in Claim 1 of the '791 Patent was insubstantial. Dr. Michl admitted that cerium oxide can play a dual role in the porcelain. Based on this evidence a reasonable juror could have concluded that the difference in the amount of cerium oxide was insubstantial and found infringement under the doctrine of equivalents.

C. Defendants' Liability

Defendants next claim that Plaintiff presented no evidence that any unauthorized entity made, used, sold, offered for sale,

or imported into the United States a post-fired dental restoration covered by the asserted claims. The Defendants' argument essentially breaks down into two parts.

First, Defendants note that in its Ruling on Cross Motions for Summary Judgment, this Court construed the term "porcelain composition" in the asserted claims as meaning the post-fired restoration "as it resides in the mouth," rather than the raw pre-fired powder. Defendants argue that Plaintiff only presented evidence related to the pre-fired powder, which is not covered by the claims. The Federal Circuit has held that "an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations, even though it may also be capable of non-infringing modes of operation." Hilgreave Corp. v. Symantec Corp., 265 F.3d 1336, 1343 (Fed. Cir. 2001) (citing Intel Corp. v. United States Int'l Trade Comm'n, 946 F.2d 821, 832 (Fed. Cir. 1991)). Given that the Defendants' product could be made into an infringing restoration and that they included directions for the preparation of a restoration in the sale of the pre-fired powder, evidence of sales of Defendants' product would be sufficient to establish infringement.

Second, Defendants claim that Plaintiff failed to present evidence of use or sales of an infringing product in the United States. Plaintiff presented substantial evidence of sales of the Defendants' LF-1-PFM product. For example, the jury viewed invoices, price lists, and purchase agreements for LF-1-PFM sent

to Chameleon Dental Products, Inc. by Chemichl, Inc. See Exhibits J-2 - J-4. In addition, many of the documents and testimony that Defendants argue support their claim of prior public use also demonstrate that Defendants were attempting to sell their product in the United States. The Court concludes that the pre-fired powder, particularly with directions for its preparation, constitutes an infringing product; and thus, the jury reasonably could have concluded based on the evidence presented at trial that the Defendants made, used, sold, offered for sale, or imported into the United States an infringing product covered by the asserted claims.

D. Anticipation by the '366 Patent

Finally, Defendants claim that they proved, by clear and convincing evidence, that the asserted claims of the '791 and '884 Patents are "anticipated" by the explicit and implicit disclosure of the '366 Patent. "[A]nticipation is a question of fact." Trintec Indus., Inc., v. Top-U.S.A. Corp., 295 F.3d 1292, 1294 (Fed. Cir. 2002). "A single prior art reference anticipates a patent claim if it expressly or inherently describes each and every limitation set forth in the patent claim." Id. at 1295 (citing Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631 (Fed. Cir. 2002)).

The heart of the Parties' disagreement at trial related to the size of the leucite crystals in Example 2 of the '366 Patent. Plaintiff claimed that the leucite crystals in the 5-10 micron

range in the raw powder of Example 2 would grow when heated to 955° C in the process of forming a restoration, thus rendering them larger than the "less than 10 microns" requirement in the Plaintiff's patents. Defendants contested this claim with evidence of Dr. Walker's tests, which concluded that the crystals in Example 2 would not grow appreciably when heated, and Dr. Michl's testimony that leucite crystals grow by a maximum of 10% after three or four firings, and then reach a plateau where no further growth occurs. Defendants assert that their evidence mandates judgment as a matter of law on the question of anticipation by Example 2 of the '366 Patent.

The Court disagrees. Plaintiff presented testimony that Example 2 was directed to an intermediate porcelain and not a final restoration; that given the patent's teaching that the crystals were on the order of 2-50 microns in the precursor feldspar, the reference in the patent to leucite crystals in the range of 5-10 microns was consistent with average particle size as opposed to an absolute particle size range of "less than 10 microns;" and that the '366 Patent does not teach how to create small leucite and does not specify the parameters with respect to the time and temperatures used to fire the final restoration. The Plaintiff also presented testimony that leucite crystals would grow at certain temperatures. In addition, the Plaintiff elicited testimony from Dr. Walker on cross-examination that he did not follow the teaching of the '366 Patent in attempting to

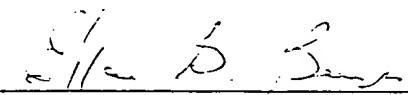
reconstruct Example 2, that he started out with different materials than those called for in Example 2, and that he used the "wet settling technique" taught in the Plaintiff's '791 and '884 Patents, which is not taught in the '366 Patent, to achieve small crystal growth.

The Plaintiff advanced evidence that contradicted the Defendants' evidence and elicited facts that discredited the reliability of Dr. Walker's tests, which served as the foundation of the anticipation argument. The jury simply found the Plaintiff's evidence on anticipation to be more persuasive than the Defendant's evidence. The Court finds that there was substantial evidence presented for a reasonable jury to conclude that the asserted claims of the '791 and '884 Patents are not "anticipated" by the disclosure of the '366 Patent.

IV. CONCLUSION

In summary, and for the reasons set forth above, Defendants' Motion for Judgment as a Matter of Law [Doc. No. 164] is DENIED on all bases.

SO ORDERED.


Ellen Bree Burns,
Senior District Judge

Dated at New Haven, Connecticut, this 22 day of August, 2002.

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U.S. DISTRICT COURT
NEW HAVEN, CT

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UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

JENERIC/PENTRON, INC. :
Plaintiff :
v. : No. 3:98cv818(EBB) - Lead
: No. 3:99cv1775 (EBB)
DILLON COMPANY, INC., :
CHEMICHL, INC., and :
CHEMICHL AG. :
Defendants :

Ruling on Plaintiff's Renewed Motion for a New Trial on the
Public Use Defense and Motion for Sanctions

Plaintiff Jeneric/Pentron, Inc. ("Jeneric" or "Plaintiff") moves pursuant to Rule 59 to have the Court grant a new trial on Defendants' public use defense based on newly discovered evidence. See Plaintiff's Renewed Motion for a New Trial on the Public Use Defense and Motion for Sanctions Pursuant to Fed. R. Civ. P. 37(c) [Doc. No. 188]. In the alternative, Jeneric asks that the Court sanction the defendants, Dillon Company, Inc., Chemicnl, Inc., and Chemicnl AG ("Defendants"), for failing to produce the new evidence according to earlier discovery requests. See id. For the reasons discussed below, Jeneric's motion for sanctions is hereby GRANTED. The sanction the Court imposes is to strike Defendants' affirmative defense of public use. While the Court finds that a new trial on Defendants' public use defense is otherwise justified by the new evidence, a new trial

is unnecessary given both the jury's original findings and the newly imposed sanction.

I. BACKGROUND

Familiarity with the general history of this case, which has been fully set forth in prior rulings, is presumed and will not be exhaustively repeated herein. The Court will, however, briefly recount the events pertaining directly to Jeneric's motions for a new trial and sanctions. In doing so, the Court culls any additional facts from the numerous pleadings, memoranda of law, and exhibits attached thereto, that have been filed in this matter.

Jeneric initiated this litigation in May 1998 when it brought a patent infringement action against Defendants. Jeneric claimed that Dillon's Cerpress SL and Sensation SL products infringe two of Jeneric's patents, United States Patent Number 5,653,791 (the "'791 Patent") and United States Patent Number 5,944,844 (the "'844 Patent"). Defendants denied that those products infringed Jeneric's patents, and countered that Jeneric's patents were anticipated by a third patent, United States Patent 4,604,366 (the "'366 Patent"). Defendants also countered with an affirmative defense of the prior use of LF-PFM, a composition that Defendants claimed is the same as LF-1-PFM, which Dillon repackaged and sold as Cerpress SL and Sensation SL.

The jury portion of this trial, which addressed the issues of patent validity and infringement, commenced on May 20, 2002. During the first day of the jury trial, Jeneric presented the testimony of Carlino Panzera and Dr. Richard D. Sisson, after which Jeneric rested its case-in-chief.

The following day, on May 21, 2002, prior to putting on their defense, Defendants, through Dr. Rudolf Michl, unexpectedly produced five scanning electron micrographs ("SEMs") that fell within the scope of earlier discovery orders. According to Michl, the five SEMs produced on the morning of May 21, 2002 had previously been in the possession of Gerhard Beham, who was the Research Director of Chemicl AG and the inventor of the LF-PFM product. After a brief discussion and inquiry by the Court, the SEMs were excluded, and Defendants proceeded with their defense.

On May 24, 2002, the jury returned its verdict, in which it concluded that Cypress SL and Sensation SL did infringe certain claims of both the '791 and '884 Patents, and that those patents were not anticipated by the '366 Patent. However, the jury also found that the '791 and '884 Patents were anticipated by the public use of LF-PFM prior to the "critical date" of March 12, 1995.

Following the jury's verdict, Jeneric moved, inter alia, for a judgment as a matter of law, which the Court denied. See JMOL and New Trial Ruling of August 21, 2002 [Doc. No. 178]. Jeneric also moved for a new trial, which the Court denied without prejudice to renewal. See id.

In denying Jeneric's motion for a new trial, the Court noted it was doing so "without prejudice to renewal if Plaintiff's current inquiry into newly discovered documents leads to admissible evidence in support of its claims." Id. On July 17, 2002, during an in-chambers conference with counsel, the Court had granted leave to Jeneric to conduct post-trial discovery. Specifically, the Court granted leave to Jeneric to take the deposition of Michl, who had produced the five SEMs, and to inquire into the circumstances surrounding his belated production of the SEMs. Due to the circumstances, the Court directed that judgment not be entered pending the resolution of the post-trial discovery on the newly discovered evidence.

Michl was deposed on August 6, 2002 and September 6, 2002. In addition, on August 6, 2002, Michl produced two volumes of SEMs and a logbook of Beham. Later, on August 28, 2002, Chemical AG produced five additional laboratory notebooks and a complaint log.

Following the completion of post-trial discovery, Jeneric renewed its motion for a new trial, in addition to filing a motion for sanctions. In addition to receiving responsive pleadings from both sides, the Court also held oral argument on January 9, 2003.

II. STANDARD FOR NEW TRIAL

Rule 59(a) of the Federal Rules of Civil Procedure provides that a "new trial may be granted . . . on all or part of the issues (1) in an action in which there has been a trial by jury, for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States."

FED. R. CIV. PRO. 59(a). A new trial based on newly discovered evidence is warranted where the new evidence (1) is "material and not merely cumulative, (2) could not have been discovered before trial through the exercise of reasonable diligence, and (3) would probably have changed the outcome of the trial." See Geressy v. Digital Equip. Corp., 980 F. Supp. 640, 646-47 (E.D.N.Y. 1997)

(quoting Compass Tech. v. Tseng Labs., 71 F.3d 1125, 1130 (3d Cir. 1995) (citations omitted)); Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1284 (Fed. Cir. 2000)

(articulating same standard).¹

¹ Although this is a patent case, whether to grant a new trial is a procedural matter. Thus, the Court is guided by the law of the Second Circuit, as opposed to the Federal

III. DISCUSSION OF MOTION FOR NEW TRIAL

1. Due Diligence in Seeking New Evidence

By all accounts, Jeneric exercised reasonable due diligence in its pursuit of the new evidence in question. Indeed, fault for the failure to timely produce the new evidence rests entirely with Defendants.

Jeneric issued numerous discovery requests concerning laboratory notebooks, micrographs, and materials in Beham's possession. Michl admits knowing of these requests, yet failed to make reasonable efforts to produce the requested materials.

In addition, the Court specifically referred to Defendants' outstanding obligation to produce requested documents, including materials in Beham's possession, in its February 17, 1999 letter to the parties. See Letter from Court, February 17, 1999 [Exhibit M-154; Doc. No. 204]. In directing the parties to continue discovery, the Court noted that "[t]his discovery seeks information from Gerhart Beham, the inventor of the Defendant's products, and it may have a direct bearing on the size of the leucite crystals in the Defendant's products." Id. Michl stated

Circuit. See Mentor H/S, Inc. v. Medical Device Alliance, Inc., 244 F.3d 1365, 1374 (Fed. Cir. 2001) ("Whether a new trial was properly granted is a procedural issue not unique to patent law; we therefore review the trial court's grant of a new trial under the law of the regional circuit.") (citing Southwest Software, Inc. v. Harlequin Inc., 226 F.3d 1280, 1290 (Fed. Cir. 2000)).

during his post-trial deposition that he was fully aware of the Court's letter and its specific reference to the materials in Beham's possession that were still outstanding. Nonetheless, Michl admitted to making no efforts to produce or seek out those materials from Beham, despite the fact that Michl was charged with so doing. See Deposition of Rudolf J. Michl, Vol. I, at 18-19 [attached as "Exhibit B" to Defendants' Memorandum in Opposition to Plaintiff's Renewed Motion for a New Trial and for Sanctions] [Doc. No. 194].

It is clear Jeneric pursued the newly discovered evidence with due diligence, yet was powerless to procure it in the face of Defendants' behavior. Thus, the Court finds that the newly discovered evidence could not have been discovered prior to trial through the exercise of reasonable diligence.

2. Materiality and Non-Cumulative Nature of Evidence

In assessing both the materiality and non-cumulative nature of the new evidence, it is important to keep in mind both what evidence was, in fact, introduced at trial, as well as the legal standard for establishing a public use defense.

To establish a public use or "anticipation" defense under 35 U.S.C. § 102(b), a party must show that "each and every element as set forth in the claim is found, either expressly or

inherently described, in a single prior art reference." Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1570 (Fed. Cir. 1988). A party's burden of proving such a defense is by clear and convincing evidence. See Minnesota Min. & Mfg. Co. v. Chemque, Inc., 303 F.3d 1294, 1301 (Fed. Cir. 2002); Baker Oil Tools Inv. v. Geo Vann, Inc., 828 F.2d 1558, 1562 (Fed. Cir. 1987). Thus, at trial, Defendants had the burden of establishing, by clear and convincing evidence, that the asserted claims of the '791 and '884 patents were "anticipated" by Chemicl's LF-PFM product, in that Chemicl's LF-PFM product had been in "public use" in the United States prior to the "critical date" of March 12, 1995.

As detailed in its JMOL and New Trial Ruling of August 21, 2002, the Court concluded that the jury could have found a prior "public use" based on (1) testimony of Rudolf Michl that LF-1-PFM and LF-PFM refer to the same product; that neither the composition of this product nor the instructions for its use have changed since 1994; and that the only change made since 1994 has been with respect to its name; (2) testimony of Timothy Sigler, President of Chameleon Dental Products, a company that purchases the Defendants' products, that Sigler's company sampled and used LF-PFM in 1994; and that the composition of the product currently

known as LF-1-PFM has never been changed; and (3) testimony of Richard Sisson, who tested Dillon's Sensation product and concluded that the sample of Sensation bearing batch number 131294N, which Michl testified was formulated on December 13, 1994, possessed all of the limitations recited by the asserted claims of the '791 and '884 Patents. See JMOL and New Trial Ruling of August 21, 2002, at 6-8.

Much of the new evidence pertains directly to the issue of public use, and, in fact, directly refutes the three points upon which the Court previously ruled that the jury could have reasonably found for Defendants on their public use defense.

For example, although Michl and Sigler both testified that the LF-PFM product never changed between 1994 and 1998, the newly produced SEMs, made in 1995 and 1996, strongly suggest that there were critical changes made in the material prior to 1998. These apparent changes, both in the amount of leucite present in the porcelain and in the leucite crystal morphology, directly implicate Defendants' anticipation defense. In addition, the newly produced SEMs indicate that Defendants' earlier LF-PFM compositions contain elemental departures from Jeneric's patent, further undercutting Defendants' affirmative defense.

The new evidence consisting of laboratory notebooks is also material and non-cumulative, as it suggests multiple instances where the LF-PFM was "reworked," "corrected," or subject to experimentation without changing batch numbers. Such evidence contrasts sharply with Michl's trial testimony, and supports Jeneric's argument that the 1994 batch number no longer conclusively refers to the composition as it existed in 1994. Indeed, while Defendants asserted at trial that a batch number dated in 1994 meant that the product would have been unchanged until 1998, Michl's testimony on the subject changed after being confronted with the new evidence during his post-trial deposition. See Deposition of Rudolf J. Michl, Vol. II, at 24 (Attorney Cass: "When [a product is] corrected, does the batch number change?" Michl: "It's always the same.").

The new evidence also would have provided fertile material for Jeneric to rebut Sigler's testimony that the composition of LF-PFM never changed. As Jeneric notes in its pleading, Sigler's opinion that the composition of the product ultimately known as LF-1-PFM never changed since his company first sampled and used LF-PFM in 1994 "was not based on first-hand knowledge of the structure of the LF-PFM but simply a conclusion from negative inferences, i.e., that he was not notified of a change and that

his technician probably would have noticed a change if there was one." Plaintiff's Memorandum of Law in Support of its Renewed Motion for a New Trial on the Public Use Defense and Motion for Sanctions Pursuant to Fed. R. Civ. P. 37(c), at 26 [Doc. No. 189]. Sisson's expert analysis of the newly discovered microscopic evidence of the same material in question, as well as new evidence of Defendants' apparent developmental activity concerning LF-1-PFM, critically undercuts Sigler's testimony. Furthermore, the new evidence also provides Jeneric with an explanation to the jury for the conspicuous one-and-a-half-year gap in commercial activity from the time Sigler first sampled the product.

Lastly, Sisson's trial testimony, which the Court described as "perhaps the most helpful piece of evidence to the Defendants' claim of public use," JMOL and New Trial Ruling of August 21, 2002, at 7, is now cast in a completely different light given new evidence suggesting that a batch number dated in 1994 does not necessarily remained unchanged in 1998, notwithstanding the fact that the batch number remains the same.

Defendants contend that Jeneric's argument that Chemical was somehow changing the attributes of the LF-PFM product in 1995 or 1996 was already made to the jury, rendering the newly discovered

evidence cumulative and immaterial for those purposes. The Court, however, is not persuaded by Defendants' arguments. Although Jeneric argued at trial that ChemicI was somehow changing the attributes of the LF-PFM product in 1995 or 1996, the new evidence is not nearly of the same character or quality as the evidence presented at trial.

For example, as a result of Defendants' discovery misconduct, neither Jeneric nor Defendants used any SEMs in support of their case. When Jeneric's expert, Sisson, attempted to show that LF-PFM had changed over time, he was forced to rely upon Exhibit J-120, which was a photocopy of a photomicrograph. Not only was Sisson incapable of determining, absent a good deal of speculation, the composition of what was depicted in Exhibit J-120, his reliance on "a copy of a very poor photomicrograph" was a point that Defendants' counsel stressed during both cross-examination² and closing argument.³

In addition to having the actual SEMs, Jeneric also now has laboratory notebooks which provide critical information

² See, e.g., Jury Trial Transcript, Vol. I, at 237 (Attorney Sommer: "And all you had before you was a copy of a very poor photomicrograph; is that right?" Dr. Sisson: "Yes, sir.").

³ See, e.g., Jury Trial Transcript, Vol. IV, at 65 (Attorney Sommer: "Neither [expert] can say conclusively [what the "globs" in Exhibit J-120 are] because they weren't there and they don't have the original photomicrograph. They're just looking at a copy of as [sic] very bad copy.").

pertaining to dates and testing parameters of the products displayed in the SEMs. Used together, the SEMs and laboratory notebooks would have provided Jeneric with persuasive evidence to rebut Defendants' testimonial proof.

Defendants also argue that assuming, arguendo, the materiality and non-cumulativeness of the new evidence, a new trial should not be granted because the new evidence would be inadmissible under the rules of evidence. Specifically, Defendants argue that the logbooks belonging to Beham are inadmissible because Beham is unavailable to authenticate them. Furthermore, Defendants argue that the SEMs are inadmissible to prove the truth of the matters depicted therein because there is insufficient evidence to establish how the samples were prepared from the raw powder. As stressed by Defendants, "[t]he only one who knew the specific identity of the raw powders, and the conditions of time and temperature under which the physical samples from which the 1995 and 1996 SEMs were taken, was Mr. Beham, regrettably now deceased." Defendants' Sur-Reply to Plaintiff's Reply Brief Re: Plaintiff's Renewed Motion for a New Trial and for Sanctions, at 4 [Doc. No. 201].

Of course, although Beham died in 2000, he was alive and presumably able to authenticate and explicate his own logbooks

and corresponding SEMs during the period in which they were being sought by Jeneric. Furthermore, the entries in the logbooks have indicia of reliability and, as admitted by Michl during his post-trial deposition, the logbooks were maintained in the regular course of business. See Deposition of Rudolf J. Michl, Vol. I, at 122. Thus, the Court is not persuaded by Defendants' argument concerning the new evidence's inadmissibility under the rules of evidence. Defendants should neither be able to hide behind nor benefit from an argument of inadmissibility in light of the fact that they alone created any possible inadmissibility concern.⁴

Based on the foregoing discussion, the Court finds that the newly discovered evidence is material and non-cumulative. The new evidence, all of which relates to the development and microstructure of the LF-PFM product, cuts to the heart of the public use defense. To the extent that some overlap exists between the new evidence and that evidence already presented at

⁴ It is worth noting that, during the trial, both parties stipulated to the admissibility of Exhibit J-120, the above-described "copy of a poor copy" that Jeneric was forced to rely upon. The newly produced SEMs, unlike Exhibit J-120, have a substantial amount of additional documentation corroborating their reliability, regardless of any contribution from Beham. Thus, the Court questions whether Defendants might reasonably argue against the admissibility of the new evidence despite having previously stipulated to the admissibility of evidence that, by all accounts, is less reliable.

trial, the Court does not find it sufficient to preclude a new trial.

3. Probability of a Change in the Outcome at Trial

In assessing whether the new evidence would probably have changed the outcome of trial, the Court keeps a steady focus on Defendants' burden of proving its public use defense, as well as the other evidence adduced at trial. See Residential Funding Corp. v. DeGeorge, 306 F.3d 99, 112 (2d Cir. 2002) (instructing district court on remand to "consider the likelihood that the newly produced e-mails would have affected the jury's verdict, in light of all of the other evidence adduced at trial"). See also Song v. Ives Labs., 957 F.2d 1041, 1047 (2d Cir. 1992) (noting that "a trial judge hearing a motion for a new trial 'is free to weigh the evidence himself and need not view it in the light most favorable to the verdict winner'"') (quoting Bevevino v. Saydjari, 574 F.2d 676, 684 (2d Cir. 1978)).

As noted above, much of the new evidence refutes or critically undercuts Defendants' public use defense. Moreover, the Court is struck by the qualitative difference between much of the new evidence and that which was presented at trial. Given that Defendants relied almost exclusively on testimonial evidence, there is a substantial probability that the documentary

evidence of both the SEMs and laboratory journals showing that LF-PFM was altered would have changed the outcome of the jury's finding on public use. See Mahurkar v. C.R. Bard Inc., 79 F.3d 1572, 1577 (Fed. Cir. 1996) ("requiring corroboration where a party seeks to show conception through the oral testimony of an inventor"). Indeed, the only piece of documentary evidence that Defendants actually relied upon at trial, Sisson's 1998 test results, is now seen in a significantly different light given the new evidence and Michl's deposition testimony. The outcome at trial could well have been different if this new evidence had been available.

Moreover, given the apparent interest shown by the jury in Sigler's testimony--after deliberating for over three hours, the jury asked to hear Sigler's testimony a second time--the Court is convinced even further that the new evidence would probably result in a different outcome.

The Court previously found Sigler's testimony to be significant to the jury's findings. See JMOL and New Trial Ruling of August 21, 2002, at 7 (surmising "that the jury members placed considerable emphasis on Mr. Sigler's testimony as a disinterested witness as evidenced by their request to have his testimony read back to them a second time"). Furthermore,

Sigler's testimony was relevant only to Defendants' public use defense. Given the apparent difficulty the jury was having in reaching a verdict on that particular issue, the Court believes that the newly discovered micrographs and laboratory notebooks might have been "the tipping factor" that would have resulted in a different outcome. See Advanced Display, 212 F.3d at 1286 (noting that "after initial deliberations the jury was in equipoise on the issue of obviousness, and this newly discovered evidence could have been the tipping factor for finding the West patent to be not invalid").

In addition, the Court also finds, as a general matter, that Defendants' discovery misconduct significantly affected Jeneric's trial strategy to such an extent as to further justify a new trial. As the Federal Circuit notes:

[T]he impact of [the newly discovered evidence] on the issue of infringement is not limited solely to the content of the [evidence]; rather, this evidence has ramifications that would have greatly changed the complexion of [defendant's] trial strategy. If [defendant] possessed this evidence before trial, it could have chosen to depose more witnesses[,] . . . pursued different avenues of discovery, sought additional corroborating evidence, implemented different tactics during cross-examination, and so forth.

Advanced Display, 212 F.3d at 1288. Here, the newly produced evidence unquestionably affected Jeneric's strategy, whether in a decision to depose Beham, prior to his death, and possibly his

laboratory assistants, or in Jeneric's ability to fully explore Beham's experimental practices concerning LF-PFM.

In conclusion, the Court finds that the newly discovered evidence satisfies the factors for granting a new trial based on newly discovered evidence under Rule 59.

IV. STANDARD FOR IMPOSING SANCTIONS

Under Rule 37(c) of the Federal Rules of Civil Procedure, a court may impose appropriate sanctions against "[a] party that without substantial justification fail[ed] to disclose information required by Rule 26(a) or 26(e)(1)." See FED. R. CIV. P. 37(c). Such sanctions may include payment of reasonable expenses, including attorney's fees, caused by the failure, as well as those authorized by Rule 37(b)(2)(A), (B), and (C). Among the sanctions enumerated by Rule 37(b)(2)(C) is "[a]n order striking out pleadings or parts thereof." Id.

Striking a portion of a litigant's pleading, like a dismissal, is a harsh sanction that should be reserved for extreme cases. See Cine Forty-Second St. Theatre v. Allied Artists, 602 F.2d 1062, 1066 (2d Cir. 1979); accord Update Art, Inc. v. Modigliani Publ'g, Ltd., 843 F.2d 67, 71 (2d Cir. 1988) (noting that "[t]he harshest sanctions available are preclusion of evidence and dismissal of the action"). That said, the Court

may appropriately order such a sanction under Rule 37 for "willfulness, bad faith, or any fault" on the part of the sanctioned party." Baba v. Japan Travel Bureau Int'l, Inc., 111 F.3d 2, 5 (2d Cir. 1997) (citations omitted). Indeed, Rule 37 authorizes the imposition of sanctions for negligence or tactical intransigence as well as willful or intentional wrongs. See Penthouse Int'l, Ltd. v. Playboy Enters., Inc., 663 F.2d 371, 387 (2d Cir. 1981). Crafting and imposing such sanctions is within the broad discretion of the court. See Residential Funding Corp., 306 F.3d at 107 (emphasizing that district court has "broad discretion in fashioning an appropriate sanction").

V. DISCUSSION OF MOTION FOR SANCTIONS

Here, Jeneric requests that the Court strike Defendants' affirmative defense of public use as a sanction for Defendants' discovery misconduct. Given that Defendants perpetrated discovery misconduct for a period of years and, in doing so, significantly prejudiced Jeneric, the Court finds that striking Defendants' affirmative defense of public use is amply justified and appropriate.

As already discussed, the newly discovered evidence was explicitly and repeatedly sought by Jeneric from the initiation of this lawsuit. Not only does the new evidence fall within the

general ambit of Jeneric's pre-trial discovery requests, but Jeneric also made specific requests for the evidence recovered from Beham.

In his post-trial deposition, Michl acknowledges his awareness of Jeneric's repeated pre-trial requests for the evidence in question, yet he admits to making no efforts to seek it out. Indeed, while Michl admits to knowing that Jeneric was specifically seeking out materials in Beham's possession, Michl also admits that he chose not to "burden" Beham, even prior to Beham's becoming ill in August 2000, by seeking out the requested materials. See Deposition of Rudolf J. Michl, Vol. I, at 17-19. Moreover, as suggested by the contents of the new evidence, even some of Defendants affirmative responses to Jeneric's requests for documents were nevertheless incomplete.

Michl's explanation for his failure to seek out documents from Beham and others fails to adequately justify, much less explain, the discovery misconduct. As Defendants' counsel offered during oral argument, Michel "didn't burden the other folks [at Chemic1] because they could speak English only fleetingly; let alone not understand the legalese" of their discovery obligations. Transcript, Hearing on Motion for a New Trial Based on Newly Discovered Evidence, Jan. 9, 2003, at 49.

Michl, who is bilingual, was legally responsible for faithfully responding to Jeneric's requests for materials. Thus, even if the Court were to accept Michl's excuse that his failures were not a result of bad faith, Michl's behavior nonetheless reveals a deliberate failure to comply with his discovery obligations.

Adding to the troubling nature of Michl's behavior is the fact that Michl, after locating the materials in question and bringing them to the United States, failed to promptly turn them over to Jeneric. Although there is some debate as to when, in fact, Michl finally possessed the materials found in Beham's office, there is no question that Michl was present in court during Defendants' opening argument on May 20, 2002, see Jury Trial Transcript, Vol I, at 51, yet failed to turn over any of the new evidence until the next morning, after Jeneric had completed its case-in-chief.

In addition to committing these various discovery breaches, Defendants also sorely prejudiced Jeneric. Indeed, even notwithstanding the Court's findings that the new evidence would probably have changed the jury's verdict on public use, the Court may simply infer from Defendants' grossly negligent behavior that the newly discovered evidence was unfavorable to Defendants'

case. See Residential Funding Corp.. 306 F.3d at 109 ("[A] showing of gross negligence in the . . . untimely production of evidence will in some circumstances suffice, standing alone, to support a finding that the evidence was unfavorable to the grossly negligent party.").

The Court is obligated and empowered "to ensure that a party does not benefit from its failure to comply, and to deter those who might be tempted to such conduct in the absence of such a deterrent." Communispond, Inc. v. Kelley, 1998 WL 473951, at *4 (S.D.N.Y. Aug. 11, 1998) (internal quotations omitted). Here, it is clear that Defendants benefitted from their own discovery breaches. Moreover, the Court finds no justification for Defendants' behavior. Even if Defendants' late-production of evidence was not willful, but was, instead, a result of their gross or simple negligence, or even their "purposeful sluggishness," the imposition of such a harsh sanction is still appropriate. See Residential Funding Corp., 306 F.3d at 110 (holding that district court could impose sanctions for discovery misconduct based on party's "purposeful sluggishness"); Argo Marine Sys., Inc. v. Camar Corp., 755 F.2d 1006, 1015 (2d Cir. 1985) (affirming trial court's conclusion "that even if Argo's failure to comply was not willful, but was, instead, a result of

its gross or even simple negligence, sanctions may, nevertheless, be imposed").

Defendants' discovery misconduct has permeated this litigation. Over the course of nearly four years, Defendants committed discovery misconduct that affected this litigation in a wholesale manner. Jeneric was denied its right to fair discovery, a fair preliminary injunction hearing, a fair appeal, a fair summary judgment motion, and a fair trial, all of which resulted in the alleged invalidation of its patent. Although severe, the Court's sanction is nonetheless appropriate under the circumstances.

Although the above details how the behavior of Michl justifies the Court's sanction, it clearly follows that all of the defendants, not just Chemicl AG, are responsible for the discovery misconduct. Chemicl, Inc., as a wholly owned subsidiary of Chemicl AG, shares responsibility for the production of responsive documents, regardless of their location. Moreover, Michl executed the Answers and Objections to Plaintiff's First Set of Interrogatories to Chemicl, Inc., on June 16, 2000. At that time, Jeneric had requested, inter alia, information and documents relating to the amount of leucite crystals and the size of leucite crystals in LF-PFM and LF-1-PFM.

See Exhibit M-177. Thus, Chemicl, Inc. tied its legal obligations to Michl's response, and cannot now disclaim any misconduct that Michl may have perpetrated. Similarly, Dillon expressly stated that it would rely on Chemicl AG for its own defense. Thus, the court-imposed sanctions discussed herein apply to all three defendants.

CONCLUSION

For the foregoing reasons, Jeneric's request that the Court prescribe sanctions pursuant to Rule 37(b)(2), specifically, to strike Defendants' public use defense [Doc. No. 188], is hereby GRANTED. Given the jury's findings at trial, the Court's striking of Defendants' public use affirmative defense obviates the need for a new trial. Thus, although otherwise justified, Jeneric's renewed motion for a new trial [Doc. No. 188] is deemed MOOT. In addition, the Court grants Jeneric its costs and attorneys' fees incurred in pursuing the post-trial discovery and motions. Jeneric shall submit its request for such costs and fees on or before March 14, 2003.

SO ORDERED.


ELLEN BREE BURNS
SENIOR DISTRICT JUDGE

Dated at New Haven, Connecticut, this 21st day of February, 2003.

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UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

FILED SB

JENERIC/PENTRON, INC.

Plaintiff

v.

DILLON COMPANY, INC.
CHEMICHL INC., and
CHEMICHL AG.

Defendants

U.S. DISTRICT COURT
HON. JAMES L. FLAHERTY, CONN.
No. 3:98cv818 (EBB) - Lead

No. 3:99cv1775 (EBB)

Ruling on Plaintiff's Motion for Judgment as a Matter of Law, or, in the Alternative, for a New Trial with Respect to Whether LF-PFM Was in Public Use Prior to March 12, 1995

Plaintiff Jeneric/Pentron, Inc. moves for judgment as a matter of law, or, in the alternative, for a new trial, with respect to a jury's verdict that Defendants Chemichl AG's LF-PFM product was in public use prior to March 12, 1995. Because the Court finds that there was a legally sufficient evidentiary basis for a reasonable jury to find for the Defendants on this issue, the Plaintiff's motions are denied.

I. BACKGROUND

Jeneric/Pentron, Inc. ("Jeneric" or "Plaintiff") brought this patent infringement action against Dillon Company, Inc., Chemichl Inc., and Chemichl AG. ("Defendants"). Jeneric claimed that Dillon's Cypress SL and Sensation SL products infringe two of Jeneric's patents, United States Patent Number 5,653,791 (the "791 Patent") and United States Patent Number 5,944,884 ("the '884 Patent"). Defendants denied that those products infringed Jeneric's patents and countered that Jeneric's patents were

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anticipated by a third patent, United States Patent 4,604,366 ("the '366 Patent"), as well as the prior public use of LF-PFM, a composition that Defendants claimed is the same as LF-1-PFM, which Dillon now repackages and sells as Cerpress and Sensation.

After a four-day trial beginning on May 20, 2002, a jury concluded that Cerpress and Sensation did infringe certain claims of both the '791 and '884 Patents and that those patents were not anticipated by the '366 Patent; however, the jury also found that the '791 and '884 Patents were anticipated by the public use of LF-PFM prior to March 12, 1995. Although Plaintiff did not move for judgment as a matter of law on the record, it claims that it did so during the jury charge conference. Plaintiff also claims, that during this jury charge conference, it argued that the public use issue was a question of law that should not be submitted to the jury. The conference was not on the record. Immediately after charging the jurors at trial, the Court asked the Parties for their objections to the jury charge. Counsel for the Plaintiff responded as follows:

I think the jury should have been instructed that they also had to determine whatever was in prior public use had each and every element of the asserted claims. I don't believe that was properly instructed.

I renew my objection to Dr. Walker's video and test which were submitted for consideration for the jury during deliberations.

Counsel for Plaintiff made no other objections to the jury charge.

II. STANDARD OF REVIEW

"Judgment as a matter of law against a winning party is appropriate when that 'party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue . . .'" Lough v.

Brunswick Corp., 86 F.3d 1113, 1119 (Fed. Cir. 1996) (quoting

FED. R. CIV. P. 50(a)(1)). When a legal issue is submitted to a jury without an objection, the jury's verdict on the legal issue is treated as a resolution of all genuinely disputed underlying factual issues in favor of the verdict winner. Id. (citing Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1562 n. 3 (Fed. Cir. 1993), cert. denied, 511 U.S. 1031 (1994)). The jury's resolution of all factual disputes is reviewed for substantial evidence. Id. (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 975 (Fed. Cir. 1995) (en banc)). "Substantial evidence is such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review." Juicy Whip, Inc. v. Orange Bang, Inc., 292 F.3d 728, 736 (Fed. Cir. 2002) (quoting Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984))).

III. DISCUSSION

The Federal Rules of Civil Procedure state in relevant part that "[m]otions for judgment as a matter of law may be made at any time before submission of the case to the jury." FED. R. CIV. P. 50(a)(1). Because Plaintiff failed to make its motion for

judgment as a matter of law at trial before submission of the case to the jury, the Defendants argue that Plaintiff should not be allowed to proceed with the motion. Plaintiff counters that, during the jury charge conference in chambers, the Court and the Defendants were made aware of Plaintiff's contention on the public use issue and its intention to move for judgment as a matter of law. Counsel for the Defendants responds that counsel for the Plaintiff did not move for judgment as a matter of law in chambers and that Plaintiff cannot rely on general statements made during a four-hour charge conference in lieu of specific objections on the record. Given the multiplicity of arguments and exhaustive discussions that took place in what was a lengthy conference, the Court cannot recall exactly what transpired on this issue and believes that the Parties walked away with different views of any agreements that were reached.

The Court has decided to entertain Plaintiff's motion for judgment as a matter of law or in the alternative for a new trial; however, the Court will treat the public use issue as an issue that was submitted to the jury without objection.¹ Regardless of what agreement the Plaintiff believes was reached during the jury charge conference, Plaintiff had a responsibility

¹ Given this decision, the Court will not consider Plaintiff's Request for Findings of Fact and Rulings of Law on the Issue of Whether LF-PFM Was in "Public Use" Prior to March 12, 1995 because the issue was already submitted to and decided by the jury.

to object to the jury instructions on the record.² Rule 51 of the Federal Rules of Civil Procedure provides:

No party may assign as error the giving or the failure to give an instruction unless that party objects thereto before the jury retires to consider its verdict, stating distinctly the matter objected to and the grounds of the objection.

Immediately after charging the jury, the Court specifically asked the Parties for their exceptions. "A party who fails to object to a jury instruction at trial waives the right to make that instruction the basis of an appeal." Medforms, Inc. v. Healthcare Management Solutions, Inc., 290 F.3d 98, 112 (2d Cir. 2002) (quoting Fogarty v. Near N. Ins. Brokerage, Inc., 162 F.3d 74, 79 (2d Cir. 1998)). Plaintiff failed to object to the submission of the public use issue to the jury³ and thus waived its opportunity to do so.

A. Disclosure of Each and Every Element of the Asserted Claims of the '791 and '884 Patents

Plaintiff claims that Defendants failed to demonstrate by clear and convincing evidence that the LF-PFM product in the

² This responsibility is even more critical for a party appearing before this Court. This Court does not have a regular court reporter at its disposal and thus no court reporter was present at the jury charge conference in question.

³ In fact, not only did Plaintiff fail to object to the issue of public use being submitted to the jury, Plaintiff actually recorded an exception to the wording of the public use charge and stated that more should have been added to the charge. In addition, the Plaintiff included a proposed jury instruction on public use in a submission to the Court. See Plaintiff's Proposed Jury Instructions at 38 [Doc. No. 127].

United States prior to the critical date met all of the limitations of the patented invention. "When the asserted basis of invalidity is prior public use, the party with the burden of proof must show that 'the subject of the barring activity met each of the limitations of the claim, and thus was an embodiment of the claimed invention.'" Juicy Whip, 292 F.3d at 737 (quoting Scaltech Inc. v. Retec/Tetra, L.L.C., 178 F.3d 1378, 1383 (Fed. Cir. 1999)). The Court finds there was a legally sufficient basis for a reasonable jury to find for the Defendants on this issue.

First, Dr. Michl testified that LF-1-PFM and LF-PFM refer to the same product; that neither the composition of this product nor the instructions for its use have changed since 1994; and that the only change made since 1994 has been with respect to its name. He also explained that LF-PFM was an acronym for low fusing porcelain fused to metal and that it was renamed LF-1-PFM after the company developed another low fusing porcelain fused to metal composition, known as LF-3-PFM.

Second, Mr. Timothy J. Sigler, President of Chameleon Dental Products, a company that purchases the Defendants' products, testified that the composition of the product currently known as LF-1-PFM has never been changed. Mr. Sigler's company sampled and used LF-PFM in 1994. Plaintiff claims that Mr. Sigler was a biased witness because of his business relationship with the Defendants and that he had no documentary evidence such as

purchase orders from the period of time in question. The Court disagrees with this characterization and finds that a reasonable jury could have relied on his testimony. In addition to ordering dental products from the Defendants, Mr. Sigler also purchases dental products from Jeneric and has previously testified on behalf of Jeneric in other litigation.

Given that Mr. Sigler does business with both companies, he has as much interest in preserving his relationship with the Plaintiff as he does with the Defendants, and a reasonable jury could conclude that he had no motive to testify dishonestly. The jury also could have reasonably concluded that Mr. Sigler would not possess purchase orders for LF-PFM from this period because he was being sent samples rather than placing orders. The Court believes that the jury members placed considerable emphasis on Mr. Sigler's testimony as a disinterested witness as evidenced by their request to have his testimony read back to them a second time.

Finally, perhaps the most helpful piece of evidence to the Defendants' claim of public use resulted from the testing of Dillon's Sensation product by Dr. Sisson, the Plaintiff's expert. Mr. Dillon repackaged the LF-1-PFM product in smaller containers and transferred Chemichl's batch numbers to these containers. Dr. Sisson concluded that a sample of Sensation bearing batch number 131294N possessed all of the limitations recited by the asserted claims of the '791 and '884 Patents. Dr. Michl

testified that batch numbers were assigned based on when the product was formulated and that this particular batch was thus formulated on December 13, 1994. Given that this is the dating format used by Europeans, the jury reasonably could have.

determined that Dr. Michl's testimony was logical and credible and, as a result, that the testing of Plaintiff's own expert proved that a sample of the product currently known as LF-1-PFM, which was formulated on December 13, 1994, possessed all of the limitations of the asserted claims.

B. Whether Use of LF-PFM Was Public

1. Secrecy and Non-Disclosure Agreement

Plaintiff also argues that the existence of a secrecy and non-disclosure agreement between Chemichl and its customers required a finding that the use of Chemichl's product by those customers before the critical date was secret and not public.

Public use includes "any use of [the claimed] invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor." Lough, 86 F.3d at 1119 (citations omitted). A reasonable jury could have concluded that the secrecy and non-disclosure agreement did not apply to the distribution of the product at issue and thus LF-PFM was in public use before the critical date.⁴

⁴ Plaintiff argues that the interpretation of this agreement is an issue of law for the Court to decide and that the jury was not properly instructed on the applicability of the agreement. As detailed above, the Court will not consider such

The agreement between Chemichl and Chameleon, which was similar in scope and content to Chemichl's agreements with other companies, states that "such information and know-how need not be treated as confidential if (i) it is or becomes generally available to the public other than as a result of disclosure by the Party to whom it was transferred ..." Dr. Michl testified that LF-PFM had been sold in Europe prior to 1994, when it was distributed to companies in the United States. Dr. Michl's contention that LF-1-PFM was already in the public domain when being sampled by the companies in the United States is bolstered by Chemichl's 1995 Wholesale Price List, which was distributed in February of 1995, prior to the critical date of March 13, 1995, and featured LF-PFM. See Exhibit J-8. Based on this evidence it would have been reasonable for the jury to conclude that the exception to the agreement applied to the sampling of Chemichl's product.

In addition, it would have been reasonable for the jury to conclude that the secrecy and non-disclosure agreement did not apply to the LF-PFM product at all. Dr. Michl testified that, while he did not consider the samples of the LF-PFM product to be confidential, he considered certain information such as the formula to be confidential. This assertion is supported by the

objections to the jury instructions and considers the issue to have been submitted to the jury without objection. See discussion supra Part III.

plain language of the agreement, which states that the parties will "hold in the strictest of confidence information and know-how." While the agreement references information and know-how, it does not state that the product itself cannot be used or sold.

Both Dillon and Chameleon used the product in their laboratories and Chameleon utilized the product in the manufacture of restorations for sale. The jury could have reasonably been persuaded by the Defendants' evidence and the argument that it did not make sense for Chemichl to restrict the use of LF-PFM product samples it gave to customers while at the same time advertising for commercial orders of the same product through the 1995 Wholesale Price List. The Court cannot find that the jury should have concluded as a matter of law that Dillon and Chameleon were under an obligation of secrecy with respect to the samples of LF-PFM.

2. Whether Use Was Experimental

"The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as [a public] use." Lough, 86 F.3d at 1120 (quoting City of Elizabeth v. American Nicholson Pavement Co., 97 U.S. 126, 134 (1877)). A number of factors indicating experimentation are considered in reaching this determination including the number of prototypes and the duration of testing, whether records or progress reports were made concerning the testing, the

existence of a secrecy agreement between the patentee and the party performing the testing, whether the patentee received compensation for the use of the invention, and the extent of the control the inventor maintained over the testing. See id.

(citations omitted). The Federal Circuit has emphasized that "[t]he last factor of control is critically important, because, if the inventor has no control over the alleged experiments, he is not experimenting." Id.

Given the Federal Circuit's emphasis on the last factor of control, the Court concludes that the jury acted reasonably in determining that the use of LF-PFM samples by Chemichl's customers was not experimental. Mr. Dillon testified that he put the product to use in Dillon's laboratories to determine whether his company wanted to use LF-PFM in their product line and Mr. Sigler testified that his company sampled the product to see whether the product worked for them so that they could make a purchase order. Mr. Sigler also testified that he was under no obligation to report to Chemichl about his results, that Chemichl did not retain any ownership interest in the samples or the resulting restorations, and that the use of the samples was not experimental. While Mr. Dillon's testimony could be viewed as self-serving, as the Court described above, Mr. Sigler was a neutral witness.

The evidence indicates that the samples of LF-PFM provided by Chemichl were for the purpose of obtaining commercial orders

and not to perfect the invention. The 1995 Wholesale Price List includes LF-PFM as an available product. In addition, a November 1, 1994 letter from Daniel H. Johnson, President of Chemichl, Inc. to Mr. Sigler offers a discount on bulk orders of ceramic powders, including LF-PFM. See Exhibit S-34. Given Mr. Sigler's testimony and the documentary evidence listing LF-PFM as an available product, the jury was reasonable in concluding that the purpose of offering samples of LF-PFM was to obtain business and not to experiment.

3. Corroboration

Jeneric argues that the Defendants' only evidence of public use is the uncorroborated testimony of Mr. Sigler of Chameleon Dental Products that he had used a sample in his laboratory in 1994 for a commercial sale. Jeneric also argues that because Mr. Sigler has an interest in preserving his relationship with Chemichl, his testimony should be discounted. As explored above, the Court finds that the jury could reasonably conclude that Mr. Sigler was an unbiased witness given his business relationships with both Parties.

However, "corroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest." Finnigan Corp. v. International Trade Comm'n, 180 F.3d 1354, 1369 (Fed. Cir. 1999). The Court disagrees with Jeneric's characterization of the evidence put forward by the Defendants. The Defendants did not offer only the

testimony of Mr. Sigler. Mr. Dillon also testified that samples of LF-PFM were put to use in his company's laboratory.

While Mr. Dillon may be an interested party, the Defendants also put forth documentary evidence that supported the fact and time of the sampling to various companies and that supported Defendants' contention that Chemichl was trying to procure business. For example, the Defendants submitted the minutes from an August 2, 1994 meeting between representatives of Chemichl and Chameleon that notes that LF-PFM is of particular interest to Chameleon. See Exhibit S-31. Defendants also submitted a letter from Daniel Johnson of Chemichl, Inc. to Timothy Sigler of Chameleon dated November 1, 1994 that offers discounts on Chemichl's various products, including LF-PFM. See Exhibit S-34. Defendants further submitted a telefax from Rolf Keiser of Chemichl AG to Dan Johnson of Chemichl, Inc. dated November 4, 1994 that states "[a]s you mentioned, you have only recently sampled Mirage with the LF-PFM and there is as yet no feedback." See Exhibit S-28. In addition, the Defendants submitted a December 8, 1994 letter from Daniel Johnson of Chemichl, Inc. to Kevin Dillon of Leach & Dillon that states samples of LF-PFM are enclosed and that Johnson is looking forward to the possibility of doing business in the future. See Exhibit D-99, Attachment A. In addition, the Defendants submitted the 1995 Wholesale Price List quoting prices for LF-PFM. While there may have been no "smoking gun" submitted into evidence, the Court feels that there

was sufficient documentary evidence that corroborated the witness testimony offered by Defendants to convince a reasonable jury, clearly and convincingly, that LF-PFM was in public use in the United States prior to March 12, 1995.

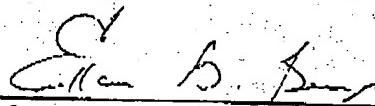
C. New Trial

Plaintiff also moves, in the alternative, for a new trial based on alleged errors in the jury instructions. As discussed previously, Plaintiff failed to make a record of these objections when it was granted such opportunity and the Court has no way of definitively verifying what transpired during the jury charge conference. Because the Court considers the Plaintiff to have waived these objections to the jury instructions, it will not consider these alleged errors as grounds for a new trial.

IV. CONCLUSION

In summary, and for the reasons set forth above, Plaintiff's Motion for Judgment as a Matter of Law [Doc. No. 158-1] is DENIED, Plaintiff's Motion for a New Trial [Doc. No. 158-2] is DENIED without prejudice to renewal if Plaintiff's current inquiry into newly discovered documents leads to admissible evidence in support of its claims, and Plaintiff's Request for Findings of Fact and Rulings of Law [Doc. No. 167] is DENIED.

SO ORDERED.


Ellen B. Burns
Ellen Bree Burns,
Senior District Judge

Dated at New Haven, Connecticut, this 24 day of August, 2002.

11

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

FILED

AUG 7 2002

U.S. DISTRICT COURT
NEW HAVEN, CT

No. 3:98cv818 (EBB) - Lead

No. 3:99cv1775 (EBB)

SFB

JENERIC/PENTRON, INC. :
Plaintiff :
v. :
DILLON COMPANY, INC., :
CHEMICHL INC., and :
CHEMICHL AG., :
Defendants :

Findings of Fact and Conclusions of Law on Charge of
Inequitable Conduct

In response to a patent infringement claim filed by Jeneric/Pentron, Inc. ("Jeneric"), Dillon Company, Inc., Chemichl Inc., and Chemichl AG ("Defendants") charge Jeneric with inequitable conduct before the Patent and Trademark Office ("PTO") during prosecution of United States Patent Number 5,944,884 ("the '884 Patent"). The Defendants base this charge on: (1) Jeneric's failure to disclose the inherent "Final Product" composition of the prior art '366 patent, and Dr. Walker's testimony at the preliminary injunction hearing that, in his opinion, the leucite crystals in that "Final Product" composition will not grow appreciably when heated to 955°C to form a restoration, and (2) the failure to disclose the results of Dr. Sisson's 1998 testing on LF-1-PFM that had been formulated in 1994, and additional known material facts surrounding Chemichl's prior use of its LF-1-PFM composition. After a two-day bench trial before this Court, the Parties submitted requests for findings of fact and rulings of law. [Doc. Nos. 164 and

166]. The Court's conclusions are outlined below. For the reasons set forth below, Defendants' charge of inequitable conduct is DENIED.

FINDINGS OF FACT

The application (the "Application") for the '884 Patent was filed in the United States Patent and Trademark Office ("PTO") on May 28, 1998. The Application was given application serial number 09/085,873 by the PTO. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 67. The Application was filed as a continuation of application number 08/870,965, which had been filed on June 6, 1997, and which was a division of application number 08/614,044, which was filed on March 12, 1996, and ultimately issued as United States Patent Number 5,653,791 (the "'791 Patent") on August 5, 1997. Exhibit 1-B, '884 File Wrapper; Exhibit 82, '791 File Wrapper; Expert Report of Lawrence Goffney at ¶ 67; and May 13, 2002 Court Trial Transcript, Vol. 1, Jeneric/Pentron, Inc. v. Dillon Company, Inc., et al., Case No. 3:98 CV 818 (EBB), at 18-19 (hereinafter referred to as "Court Transcript, Vol. 1"). Dr. Leah M. Reimer filed the Application as the attorney representing Jeneric (or "Applicants") before the PTO. Exhibit 1-B, "884 File Wrapper; and Court Transcript, Vol. 1 at 17-18.

The PTO is organized by examining groups that incorporate broad classifications such as the chemical arts and mechanical arts. Each examining group is broken into several specific smaller groups that are called art units. Each art unit has

experts in the technical field of the particular art unit who examine the respective applications. Expert Report of Lawrence Goffney at ¶ 28; and May 14, 2002 Court Trial Transcript, Vol. 2, Jeneric/Pentron, Inc. v. Dillon Company, Inc., et al., Case No. 3:98 CV 818 (EBB), at 79-82 (hereinafter referred to as "Court Transcript, Vol. 2"). A primary examiner at the PTO is a person who can sign off and allow a patent to issue. In order to become a primary examiner, a person must go through a very intensified and long review process. Exhibit 82, Expert Report of Lawrence Goffney at ¶¶ 30-32; and Court Transcript, Vol. 2 at 84-85. All examiners at the PTO other than primary examiners are called assistant examiners. All assistant examiners have their work reviewed by the specified primary examiner. Exhibit 82, Expert Report of Lawrence Goffney; and Court Transcript, Vol. 2 at 85.

The Manual of Patent Examining Procedure ("MPEP") is an instructional manual indicating the PTO's policy that examiners are to follow in examining patent applications. Expert Report of Lawrence Goffney at ¶ 37; and Court Transcript, Vol. 2 at 87-88. A prima facie case of unpatentability can be presented to the PTO by an applicant through an Informational Disclosure Statement ("IDS") and by submitting prior art references to the PTO and listing the prior art references therein submitted. Court Transcript, Vol. 2 at 98-99. After the prima facie case is disclosed, the applicant is allowed to show the examiner how the prima facie case may be overcome by submitting rebuttal information. Court Transcript, Vol. 2 at 94-95. Both the prima

facie and rebuttal cases must be submitted in good faith. The duty to disclose is set forth in 37 C.F.R. §1.56. That regulation provides that all material information must be disclosed. Court Transcript, Vol. 2 at 123-24.

When an applicant submits the rebuttal information to the PTO and the examiner is not satisfied with the rebuttal information, the examiner has the procedural option to thereafter indicate that he or she is not satisfied that the rebuttal information overcomes the prima facie case and thus may issue a rejection in an office action. Court Transcript, Vol. 2 at 100-101. In reviewing a response to an office action or an amendment, the examiner can require that the applicant submit additional information if the examiner is not satisfied with the applicant's response. Exhibit 82, Expert Report of Lawrence Goffney at ¶ 56. The applicant is under a duty to disclose all material information to the examiner and may not mislead the examiner. Court Transcript, Vol. 2 at 124-25. The examiner is not equipped to, nor does he or she normally consider issues of invalidity; rather, during the prosecution of a patent application, the examiner is attempting only to determine patentability. Court Transcript, Vol. 2 at 95-97.

After Dr. Reimer filed the Application for the '884 Patent as the attorney representing the Applicants before the PTO, on June 12, 1998, a "Notice to File Missing Parts of Application" was sent to the Applicants. This Notice to File Missing Parts of Application was to alert the Applicants that they had two months

to provide the PTO with the statutory basic filing fee for a small entity. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 68; and Court Transcript, Vol. 1 at 23. On August 11, 1998, the Applicants filed a "Request for Corrected Filing Receipt," having noticed that the filing receipt for the Application had listed Dr. Reimer as the applicant, rather than the intended applicants, Carlino Panzera and Lisa M. DiMeglio. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 69; and Court Transcript, Vol. 1 at 23-24. On August 12, 1998, the Applicants filed a response to the Notice to File Missing Parts Of Application, submitting a Declaration and Power of Attorney and a check for the Basic Filing Fee and Surcharge. The Declaration was entered into the file wrapper on August 17, 1998. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 70; and Court Transcript, Vol. 1 at 24-25.

On or about December 10, 1998, the Examiner assigned to the case sent the Applicants an Office Action (the "December 10, 1998 Office Action") with a summary sheet that listed the Examiner's objections to all of the claims. The Office Action also contained the Examiner's rejections of:

- (a) claims 1-8, 12 and 16-19 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,604,366 (the "'366 Patent") or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the '366 Patent;
- (b) claims 1-7 and 16-19 under 35 U.S.C. § 102(b) as anticipated

- by U.S. Patent No. 4,798,536 (the "'536 Patent"), or in the alternative, under 35 U.S.C. § 103(a) as obvious over the '536 Patent;
- (c) claims 1-10, 16-19 under 35 U.S.C. § 102 (a) or (e) as anticipated by U.S. Patent No. 5, 698,019 (the "'019 Patent") or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the '019 Patent.

The Examiner also rejected claims 1-19 under the doctrine of obviousness-type double patenting because these claims were not patently distinct from claims 1-18 of the '791 Patent. On similar grounds, the Examiner provisionally rejected claim 20 as not being patentable over claims 11-30 of a co-pending application, application No. 08/870965. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 71; and Court Transcript, Vol. 1 at 28-33.

In the December 10, 1998 Office Action, with regard to the rejection of claims 1-8, 12 and 16-19 under 35 U.S.C. § 102(b) as anticipated by the '366 Patent or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the '366 Patent, the Examiner stated that Example 2 of the '366 Patent teaches "the production of porcelain composition including leucite crystals having an exemplified crystallite size of 5 to 10 microns . . . with a thermal expansion within the instant claims." The Examiner thus considered the claims of the '884 Patent Application as anticipated or, in the alternative, the subject matter as a whole to be obvious to one having ordinary skill in the art "because

overlapping ranges have been held to be a *prima facie* case of obviousness." Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 72; and Court Transcript, Vol. 1 at 28- 33. Dr. Reimer admitted at the hearing on inequitable conduct that the "Final Product" composition of the '366 Patent is not to be found in the explicit disclosure of the '366 patent. Court Transcript, Vol. 1, p. 145.

On March 4, 1999, the Applicants' representatives, Dr. Reimer and Michael Cantor, visited the PTO to participate in an interview with the Examiner. During the interview the Applicants' representatives and the Examiner discussed all of the claims then pending in the Application and the Applicants' representatives suggested a solution that would put the Application in condition for allowance. Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 75; Court Transcript, Vol. 1 at 41-43 and 250. In his Interview Summary, the Examiner indicated that no agreement had been reached with the Applicants concerning the allowability of any claim. The Examiner did not include any comments in the summary about a discussion regarding leucite crystal growth. Exhibit 1-B, '884 File Wrapper, "Interview Summary."

On or about March 5, 1999, the Applicants filed an Information Disclosure Statement ("March 5, 1999 IDS") with an attached Form PTO-1449. The publications disclosed by the Applicants were listed on the Form PTO-1449. In the IDS, the Applicants listed information about the concurrent litigation in

the United States District Court for the District of Connecticut, Case No. 3:98-CV-00818 (EBB), entitled Jeneric/Pentron, Inc. v. Dillon Company, Inc. and Chemichl, Inc. The Applicants disclosed that during the litigation it was asserted that, prior to the filing date of the Application for the '884 Patent, Chemichl, Inc. distributed in the United States a dental porcelain product known as LF-1-PFM. Applicants further disclosed the alleged formula of LF-1-PFM and, moreover, that Chemichl, Inc. asserted that the LF-1-PFM had leucite crystallites possessing diameters of less than 10 microns. The Applicants also submitted a copy of a 1995 Wholesale Price List of Dental Ceramics & Related Laboratory Products of Chemichl, Inc. ("Wholesale Price List") with the IDS and further noted in the IDS - with a pinpoint citation to the attached Wholesale Price List - that ceramic products listed in the Wholesale Price List are described as exhibiting an average leucite crystal dimension of 3 microns. The Application also disclosed two scanning electron micrographs of the LF-1-PFM produced by Chemichl, Inc. Exhibit 1-B, '884 File Wrapper; and Court Transcript, Vol. 1 at 43-47.

With the information and documentation submitted by the Applicants in the IDS, the Applicants provided information sufficient to establish a prima facie case that the subject matter of all of the claims of the Application for the '884 Patent were unpatentable due to an "on sale" bar under 35 U.S.C. § 102 (b). Expert Report of Lawrence Goffney at ¶ 87. In rebutting the disclosure of the prima facie case of the alleged

on-sale bar, pursuant to 37 C.F.R. Section 1.132, the Applicants provided the Examiner with a Declaration of Richard D. Sisson, Jr., Ph.D. dated February 23, 1999. In 1999, Dr. Sisson was a Professor of Mechanical Engineering at Worcester Polytechnic Institute, teaching or having taught courses in materials science, ceramics, materials processing, materials optimization, microscopic analysis and control, and "Product Realization Process," a course that he developed with another. Exhibit 1-B, '884 File Wrapper; and Court Transcript, Vol. 1 at 47-54.

In the declaration, Dr. Sisson states that he had been retained by Jeneric, the owner by assignment of the Application, to characterize the porcelain dental products of Chemichl, Inc. Dr. Sisson indicated that he studied the scanning electron micrographs of the LF-1-PFM product as distributed in 1995, and compared those micrographs to scanning electron micrographs of the Applicant's invention in the Application to determine if the LF-1-PFM product had leucite crystallites whose diameters did not exceed about 10 microns. Exhibit 1-B, '884 File Wrapper; and Exhibit 82, Expert Report of Lawrence Goffney at ¶ 98.

Dr. Sisson concluded in his declaration that the LF-1-PFM product, as distributed in 1995, did not exhibit leucite crystals wherein the leucite crystallites possess diameters not exceeding about 10 microns. Exhibit 1-B, '884 File Wrapper; and Exhibit 82, Expert Report of Lawrence Goffney at ¶ 98. The Applicants failed to reveal the existence of Dr. Sisson's 1998 testing on Sensation, which established that a sample of LF-1-PFM that

Defendants testified had been formulated on December 13, 1994 had all of the limitations of the asserted claims, including leucite particles of less than 10 microns. Exhibit 1-B, '884 File Wrapper; and Exhibit 82, Expert Report of Lawrence Goffney at ¶ 98.

On or about April 9, 1999, the Applicants filed an amendment -- Amendment A -- as a response to the Office Action dated December 10, 1998 and pursuant to the discussions during the March 4, 1999 Interview at the PTO with the Examiner. In Amendment A, the Applicants:

- (a) amended claim 1 to incorporate limitations of claims 9 and 13;
- (b) canceled claim 9;
- (c) amended claim 13 to overcome rejections directed to § 112, first paragraph, and to incorporate limitations of claim 1;
- (d) amended claim 12 to incorporate limitations of claim 9; and
- (e) added new claims 21-49.

Furthermore, Applicants filed a Terminal Disclaimer with Amendment A to overcome rejections of claims 1-18 based on the judicially created doctrine of obviousness-type double patenting with respect to the '791 Patent and with respect to a patent that might issue from then pending Application Serial No. 08/870,965.

Exhibit 1-B, '884 File Wrapper; Exhibit 82, Expert Report of Lawrence Goffney at ¶ 77; and Court Transcript, Vol. 1 at 55-63.

In the remarks to Amendment A, the Applicants stated that they "believed that the amendments presented therein are in

accord with the agreement reached at that interview." Exhibit 1-B, '884 File Wrapper. However, the Examiner indicated in his Interview Summary that no agreement had been reached. Exhibit 1-B, "Interview Summary." Attorney Reimer admitted at the inequitable conduct hearing that the compositional limitations added to claim 1 still read on the "Final Product" composition of the '366 Patent. Court Transcript, Vol. 1 at 154. She further admitted that the '366 Patent does not teach that leucite crystals will grow when heated. Id. at 150. Attorney Reimer testified that claim 1 as amended did not distinguish from the '366 Patent on the basis of composition and that the supposed basis of distinction was the size of the leucite crystals. Id. at 161. She claims that she made the argument to the Examiner that the leucite crystals in the '366 Patent would grow when heated, but she neglected to record the substance of the interview. Id. At no point did Attorney Reimer disclose Dr. Walker's opinion from the preliminary injunction hearing that the leucite crystals in the '366 Patent would not grow when heated.

On or about April 22, 1999, the Examiner prepared a form for insertion into the '884 File Wrapper, which operated as an informal, internal memo indicating that a decision had been made with respect to the Terminal Disclaimer and that it was deemed proper and was recorded. Exhibit 1-B, '884 File Wrapper. On or about May 11, 1999, a telephonic interview was conducted between the Examiner and Dr. Reimer, wherein the Applicant and the Examiner agreed the Examiner would place an examiner's amendment

in the case to put the case in condition for allowance.

Exhibit 1-B, '884 File Wrapper.

On or about May 12, 1999, a Notice of Allowability was sent to the Applicants. The Notice of Allowability contained an examiner's amendment canceling claims 21, 23, 36 and 44 and correcting spelling errors, superfluous wording, and what appears to have been other corrections of minor mistakes in the claims.

Exhibit 1-B, '884 File Wrapper. On August 31, 1999, the Application issued as the U.S. Patent No. 5,944,884. Exhibit 1-B, '884 File Wrapper.

The information that Applicants submitted to the PTO in the March 5, 1999 IDS disclosed a prima facie case of an on-sale bar to the PTO. Court Transcript, Vol. 2 at 103-04 and 160. However, Jeneric never disclosed anything about the "Final Product" composition of the '366 Patent or the "public use" challenge to the '884 patent. Court Transcript, Vol. 1 at 159-60; Exhibit 1-B, '884 File Wrapper. The Applicants also submitted the Sisson Declaration in the March 5, 1999 IDS to the PTO to rebut the prima facie case of the on-sale bar. Court Transcript, Vol. 2 at 104-105. In his declaration, Dr. Sisson asserted that the 1995 photomicrographs of LF-1-PFM showed leucite crystals greater than 10 microns, but he later testified that he could not determine for certain whether the large white "clumps" in the photomicrographs were leucite crystals. Court Transcript, Vol. 3 at 18. In addition, as mentioned previously, Jeneric failed to reveal the existence of Dr. Sisson's testing on

Sensation, which established that a sample of LF-1-PFM that Defendants testified had been formulated on December 13, 1994 had all of the limitations of the asserted claims, including leucite particles of less than 10 microns. Exhibit 1-B, '884 File Wrapper; and Exhibit 82, Expert Report of Lawrence Goffney at ¶ 98.

If the Examiner was not satisfied with the rebuttal evidence presented by Applicants during the prosecution of the '884 Patent, then the Examiner had the procedural option of requesting further documentation from the Applicants. Court Transcript, Vol. 2 at 105-07. The Examiner did not do so, but the Defendants argue that he had no way of knowing about Dr. Sisson's 1998 tests or the "Final Product" composition of the '366 Patent. The '366 Patent itself was before the PTO during the prosecution of the '884 Patent. Court Transcript, Vol. 2 at 108. The Parties disagree as to whether more information about the '366 Patent and Dr. Sisson's tests should have been disclosed and whether or not such information was material or cumulative.

Jeneric offers a variety of explanations for why the additional information was not disclosed. During the prosecution of the '884 Patent, Dr. Reimer knew that the Sensation and Cerpress samples tested by Dr. Sisson in 1998 had been purchased from Dillon in 1998. Dr. Reimer had no recollection as to when the Sensation and Cerpress samples had allegedly been formulated despite the fact that she was present at the hearing on the preliminary injunction for such testimony. Court Transcript,

Vol. 1 at 121-23. Jeneric argues that Dr. Walker's testimony during the preliminary injunction hearing that leucite crystals in Example 2 of the '366 Patent would not grow when heated to 955 degree Celsius was not material and thus not required to have been submitted in the prosecution of the '884 Patent because the testimony was not definite in that Dr. Walker, on cross examination, testified that he did not know at what temperature the leucite crystals in Example 2 would grow. Court Transcript, Vol. 2 at 143-49 and at 152-56.

Jeneric further argues that during the prosecution of the '884 Patent Application, Dr. Reimer believed that the Defendants' "final product calculations" relating to Example 2 of the '366 Patent¹ were cumulative to what was already before the Examiner, and therefore not material to patentability. Court Transcript, Vol. 1 at 144. Dr. Reimer claims that during prosecution of the '884 Patent, the point of distinction between the '366 Patent and the '884 Patent Application was made on the basis of leucite crystal size. Court Transcript, Vol. 1 at 145. During an interview with an examiner, issues and arguments are raised that frequently do not make their way into the interview summary. Court Transcript, Vol. 2, pp. 108-109. However, regardless of what the Examiner included in his interview summary, Ms. Reimer failed to comply with her duty under 37 C.F.R. § 1.133(b), which requires that the applicant provide "a complete written statement

¹ Dr. Reimer conceded the accuracy of these calculations. Court Transcript, Vol. 1 at 95.

of the reasons presented at the interview as warranting favorable action." Court Transcript, Vol. 1 at 161, 165-66.

Mr. Cantor did not perceive any inconsistency between Dr. Sisson's declaration in the '884 Patent application and his testing of the Sensation and Cerpress samples in 1998. Court Transcript, Vol. 1 at 231. Mr. Cantor was not aware of any evidence that the Cerpress and Sensation samples tested by Dr. Sisson in 1998 had been formulated in 1994. Id. Mr. Cantor knew that the Examiner had relied on the '366 Patent in rejecting the claims of the '884 Patent application in the first office action. Id. at 230. With respect to the on sale allegation, Mr. Cantor testified that he believed that he and Ms. Reimer had disclosed the "strongest documentary evidence" of the alleged sale. Id. at 232-33.

Dr. Sisson's sole involvement with the prosecution of the '884 Patent application was as a technical expert. He was not involved in the preparation or drafting of the application itself, the claims, responses to office actions, and/or amendments. Court Transcript, Vol. 1 at 177. Dr. Sisson's declaration in the '884 file wrapper is directed solely to the size of the leucite crystals as depicted in Chemichl AG's micrographs. Court Transcript, Vol. 3 at 16, 22 and 31. As noted above, Dr. Sisson later testified that he could not actually verify that the white "blotches" in the micrographs were leucite, and there was never any disclosure that his 1998 tests were conducted on a powder that had been formulated on December

13, 1994. After reviewing the photomicrographs, Dr. Sisson found the statements in the declaration to be accurate and signed the declaration. Court Transcript, Vol. 3 at 31.

With respect to the '366 Patent, Mr. Manbeck, Defendants' expert witness, does not dispute that the reference itself was disclosed to the Patent Office; rather, it is his contention that additional information about the reference should have been disclosed. Court Transcript, Vol. 2 at 22. Mr. Manbeck testified that the prima facie case of the alleged on-sale bar was disclosed to the Patent Office, but that additional information concerning the composition involved should also have been disclosed. Id. at p. 23. Mr. Manbeck also testified that the fact that Mr. Cantor and Dr. Reimer disclosed the case name, the court, the civil action number, the allegation of the on-sale bar, the formula, the wholesale price list, and the leucite crystal size, "can be taken on the plus side that is favorable to Mr. Cantor and Dr. Reimer when the question of intent is evaluated." Id. at 57-58.

DISCUSSION

Patent applicants and their representatives are required to prosecute patent applications with candor, good faith, and honesty. See Semiconductor Energy Lab. v. Samsung Electronics, 204 F.3d 1368, 1373 (Fed. Cir. 2000) (citing Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178 (Fed. Cir. 1995)).

"[I]nequitable conduct includes affirmative misrepresentation of

a material fact, failure to disclose material information, or submission of false material information, coupled with an intent to deceive." Id. The party accusing the patent holder of inequitable conduct must demonstrate by clear and convincing evidence both that the information was material and that the conduct was intended to deceive. See id.

"Once threshold findings of materiality and intent are established, the court must weigh them to determine whether the equities warrant a conclusion that inequitable conduct occurred." Molins PLC, 48 F.3d at 1178 (citation omitted). "In light of all circumstances, an equitable judgment must be made concerning whether the applicant's conduct is so culpable that the patent should not be enforced." Id. (citing LaBounty Mfg., Inc. v. International Trade Comm'n, 958 F.2d 1066, 1070 (Fed. Cir. 1992)).

A. Materiality

37 C.F.R. § 1.56 (2001) defines information as material to patentability when:

[I]t is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on

by the Office, or

(ii) Asserting an argument of patentability.

1. '366 Patent

Defendants first claim of inequitable conduct is based on Jeneric's failure to disclose the inherent "Final Product" composition of the prior art '366 patent, and Dr. Walker's testimony at the preliminary injunction hearing that, in his opinion, the leucite crystals in that "Final Product" composition will not grow appreciably when heated to 955°C to form a restoration. The Court does not believe that this information was material to patentability.

As a matter of record, the '366 Patent was before the Patent Office during the prosecution of the '884 Patent. The Parties disagree as to whether the Examiner knew of the "Final Product" composition of the '366 Patent and whether Jeneric should have specifically informed him about it. The Examiner originally rejected Jeneric's patent application as anticipated by or as obvious over the '366 Patent because Example 2 of that Patent teaches "the production of porcelain composition including leucite crystals having an exemplified crystallite size of 5 to 10 microns" and "because overlapping ranges have been held to be a prima facie case of obviousness." Exhibit 1-B, '884 File Wrapper. As a result of this rejection and Dr. Reimer's testimony, the Court finds that, during the ensuing interview and discussions with the Examiner, the focus was on leucite crystal

size. Given this focus, any additional information about the "Final Composition" would have been cumulative to what was already before the Examiner.

The Court struggled in reaching this conclusion, largely because Jeneric failed to comply with its duty to record the substance of its discussions with the Examiner. The Examiner did not record anything in his interview summary about a discussion of leucite crystal growth and Dr. Reimer did not file a written summary of the reasons presented at the interview as warranting favorable action pursuant to 37 C.F.R. § 1.133(b). Mr. Goffney, Jeneric's expert witness and the former Assistant Commissioner for Patents, testified that many things discussed in a PTO interview do not wind up in an interview summary. The Court recognizes that Jeneric had little to no control over what went into the Examiner's interview summary; however, this fact made the Applicant's duty to file its own written summary even more critical. The Court has no real way of knowing what went on during the interview and that information is key to its decision on materiality.

Jeneric potentially could have avoided defending charges of inequitable conduct, risking its intellectual property, and taking up this Court's time by simply filing a written summary as required by law. Regardless of this failure, based on the Examiner's original reasons for rejection and Dr. Reimer's testimony about what was discussed during the interview, the

Court concludes that the '884 Patent was distinguished from the '366 Patent based on leucite crystal size and given that the '366 Patent was before the PTO, additional information about the composition would not have been material.²

2. Public Use

Defendants' second claim of inequitable conduct is based on Jeneric's failure to disclose the results of Dr. Sisson's 1998 testing on LF-1-PFM that had been formulated in 1994, and additional known material facts surrounding Chemichl's prior use of its LF-1-PFM composition. The Court believes that this information was material and should have been disclosed to the Examiner.

Jeneric disclosed to the Examiner the litigation between the Parties and stated that "Chemichl, Inc. has asserted that prior to the filing date of the instant application, they distributed in the United States a porcelain dental product, LF-1-PFM, having the formula shown in Appendix A and having leucite crystallites possessing diameters of less than 10 microns." Exhibit 1-B, '884 File Wrapper, "Information Disclosure Statement." Jeneric then went on to explain that Dr. Richard D. Sisson had evaluated

² The Defendants also believe that Dr. Walker's testimony during the preliminary injunction hearing that leucite crystals in Example 2 of the '366 Patent would not grow when heated to 955 degrees Celsius should have been disclosed to the Examiner. Given that Dr. Walker testified on cross examination that he did not know at what temperature the leucite crystals would grow, the Court finds that his testimony was not definite in nature and would not have been helpful to the Examiner.

scanning electron micrographs of the 1995 LF-1-PFM product and concluded that the product did not exhibit crystallites with diameters less than 10 microns. The Information Disclosure Statement (IDS) was dated March 5, 1999.

Jeneric never revealed Dr. Sisson's additional testing in preparation for the hearing on Jeneric's motion for a preliminary injunction finding that Sensation batch 131294N exhibited leucite crystals less than 10 microns in size. Nor did Jeneric ever reveal the testimony of Dr. Michl and Mr. Dillon at the hearing on the preliminary injunction, which took place from December 8 until December 10, 1998, that the composition of LF-1-PFM is the same as Sensation, that the batch 131294N was formulated on December 13, 1994, and that neither the composition of LF-1-PFM, nor the instructions for its use, have been changed since 1994. Dr. Reimer was present each day of the hearing on Jeneric's motion for a preliminary injunction.

While Jeneric may have done an adequate job of laying out the Defendants' claim of an "on sale" bar, Jeneric failed to adequately lay out Defendants' prima facie case of "public use." In addition, Dr. Sisson's own tests of Sensation coupled with testimony from the hearing on the preliminary injunction, all of which occurred before the filing of the IDS, directly contradict the findings that served as the basis for his declaration that was submitted with the IDS. "Information is material when there is a substantial likelihood that a reasonable examiner would have

considered the information important in deciding whether to allow the application to issue as a patent." Life Technologies v. Clontech Laboratories, 224 F.3d 1320, 1325 (Fed. Cir. 2000) (citation omitted). The Court finds that a reasonable examiner would have considered this information important in deciding whether to allow the application to issue as a patent given that the information contradicts evidence that Jeneric put forward from the same expert witness.

The Court finds that this information was not cumulative to information that was already of record or being made of record in the application and establishes a *prima facie* case of unpatentability. Thus, under 37 C.F.R. § 1.56(b), the information is material to patentability.

B. Intent

"Intent need not be proven by direct evidence; it is most often proven by a showing of acts, the natural consequence of which are presumably intended by the actor. Generally, intent must be inferred from the facts and circumstances surrounding the applicant's conduct." Semiconductor Energy, 204 F.3d at 1374-75 (quoting Molins 48 F.3d at 1180-81).

Given the facts and circumstances surrounding the applicant's conduct, the Court does not believe that Jeneric intended to deceive the Examiner at the PTO. There seems to have been real confusion among Jeneric's representatives about when the sample of Sensation used in Dr. Sisson's tests was

formulated. As a result, Jeneric did not adequately describe the prima facie case of the "public use" bar and failed to submit all of Dr. Sisson's findings.

Jeneric attempts to explain away this fact by claiming that the Examiner could have asked for more information from the Applicants during prosecution of the '884 Patent and that Dr. Reimer had no knowledge as to when the Sensation and Cerpress samples had allegedly been formulated. These explanations fail to excuse Jeneric's failure to disclose that additional information. First, the Examiner had no way of knowing about Dr. Sisson's 1998 tests or their implications. Essentially Jeneric only put forward half of the story and expected the Examiner to ask for the rest of the story without telling him there was more to be told. Second, the excuse that different lawyers were involved with the prosecution of the '884 patent than were involved with the Chemichl/Dillon litigation is not acceptable. All of the lawyers representing Jeneric in both of those cases worked for the same firm and used the same expert witness. Knowledge about the cases is attributable to all of these lawyers. In addition, Attorney Reimer was present for every day of the hearing on Jeneric's motion for a preliminary injunction and should not have needed to consult with other attorneys in her firm about the relevant testimony and Dr. Sisson's additional tests.

Nonetheless, the Court believes that Jeneric committed a

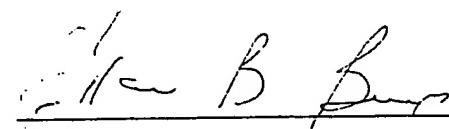
mistake rather than a calculated move to deceive the Patent Office. To Jeneric's credit, Mr. Cantor and Ms. Reimer disclosed the case name, the court, the civil action number, the allegation of the on-sale bar, the formula, the wholesale price list and leucite crystal size. Given the complexities of the case with the various claims and counterclaims, as well as conflicting testimony from expert witnesses and inventors, it is somewhat understandable that an attorney could miss an important piece of information, particularly given that this was one of the first applications that Dr. Reimer had prosecuted. In light of all circumstances, this Court cannot make an equitable judgment that the Applicant's conduct was so culpable that the patent should not be enforced.

While the Court does not find that Jeneric intended to deceive the PTO, it does find that Jeneric failed to inform the PTO of all material information. This failure does not rise to the level of inequitable conduct, but Jeneric's representatives' practices for the future should be modified in order to avoid the risk of negative inferences being made about their behavior and additional charges of inequitable conduct.

CONCLUSION

In summary, and for the reasons set forth above, the Defendants' claim of inequitable conduct is DENIED. [Doc. Nos. 164 and 166].

SO ORDERED.



Ellen Bree Burns
Senior District Judge

Dated at New Haven, Connecticut, this 6 day of August, 2002.

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UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

FILED

MAY 16 2002

JENERIC/PENTRON, INC.

Plaintiff,

v.

DILLON COMPANY, INC.,

CHEMICHL, INC., and

CHEMICHL AG.

Defendants.

No. 3:98cv818 (EBB) - Lead RNW
No. 3:99cv1775 (EBB)Ruling on Plaintiff's Motion for Permanent Injunction

Before the Court is Plaintiff Jeneric/Pentron, Inc.'s ("Jeneric/Pentron") motion for entry of a permanent injunction against all three defendants, Dillon Company, Inc., Chemiclh, Inc. and Chemiclh AG ("Defendants"). Pursuant to 35 U.S.C. § 283, Jeneric/Pentron moves to prevent future infringement of the asserted patents, U.S. Patent No. 5,653,791 ("'791 patent") and U.S. Patent No. 5,944,844 ("'844 patent"). For the reasons discussed below, the Court hereby GRANTS Plaintiff's Motion for Permanent Injunction [Doc. No. 207].

I. BACKGROUND

The general history of this case has been fully set forth in prior rulings and, for the purposes of this ruling, is presumed and will not be exhaustively repeated herein. Accordingly, the Court sets forth only those facts deemed necessary to an understanding of the issues raised in, and decision rendered on, this motion.

On May 24, 2002, the jury in this matter returned its

verdict in which it concluded the following: that Dillon's Cerpress product infringes claims 1 and 2 of Jeneric/Pentron's '791 patent under the doctrine of equivalents; that Dillon's Sensation product infringes claims 1 and 2 of the '791 patent under the doctrine of equivalents; that Dillon's Sensation product literally infringes claim 1 of Jeneric/Pentron's '844 patent; and that Defendants had not proven that U.S. Patent No. 4,604,366 ("'366 patent") anticipated either the '791 patent or the '844 patent.

Despite these findings, however, Defendants escaped liability because of the jury's final finding that Defendants had proven that the '791 and '884 patents were anticipated by the public use of LF-PFM prior to the "critical date" of March 12, 1995. According to Defendants, LF-PFM, which Defendants claimed was the same as LF-1-PFM, was repackaged and sold by Dillon as Cerpress and Sensation.

Following post-trial discovery, Jeneric/Pentron moved for a new trial on the discrete issue of Defendants' affirmative defense of public use. Jeneric/Pentron also requested that the Court impose sanctions against Defendants for their discovery misconduct.

On February 27, 2003, the Court granted Jeneric/Pentron's motion for sanctions and struck Defendants' affirmative defense of public use. See Ruling, February 27, 2003 [Doc. No. 205].

Given both the jury's original findings and the Court-imposed sanction, Jeneric/Pentron's motion for a new trial on the public use was no longer necessary, although otherwise justified.

In an Order dated the same day, the Court directed the parties to submit, jointly, if possible, a proposed schedule for discovery pertaining to the trial on damages that became necessary once the Court issued its ruling. See Order, February, 27, 2003 [Doc. No. 206]. Shortly thereafter, Jeneric/Pentron filed its present motion for a permanent injunction.

II. STANDARD FOR ISSUING A PERMANENT INJUNCTION

Under 35 U.S.C. § 283, "The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable." Id. As noted by the Federal Circuit, "it is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir. 1989). Indeed, "[a]lthough the district court's grant or denial of an injunction is discretionary depending on the facts of the case, injunctive relief against an adjudged infringer is usually granted." W.L. Gore & Associates, Inc. v. Garlock, Inc., 842 F.2d 1275, 1281 (Fed. Cir. 1988) (internal citations omitted); see also Richardson, 868 F.2d at 1246-47 ("Infringement having

been established, it is contrary to the laws of property, of which the patent law partakes, to deny the patentee's right to exclude others from use of his property."). That being said, whether to grant an injunction is left to the discretion of the district court after considering the equities of the particular case. See Roche Products, Inc. v. Bolar Pharmaceutical Co., 733 F.2d 858, 866 (Fed. Cir. 1984).

III. DISCUSSION

Jeneric/Pentron offers four factors it feels are appropriate for the Court to analyze when considering the equities in this matter. Those factors are whether the patentee would be irreparably harmed without an injunction, whether the patentee has an adequate remedy at law, whether granting the injunction is in the public interest, and whether the balance of hardships favors an injunction. See Plaintiff's Reply at 2-7 [Doc. No. 214]. Defendants offer considerations of their own in opposing the issuance of an injunction, namely, that Jeneric/Pentron is not practicing the invention, that Defendants have a number of substantive issues for appeal, and that the issuance of an injunction is not proper because of due process concerns. See Defendants' Opposition at 3-8 [Doc. No. 212].

As noted above, the Court is to consider the "equities of the particular case," see Roche Products, Inc., 733 F.2d at 866, and need not give each factor equal weight. With this in mind,

the Court now considers each of the above-mentioned factors.

1. Whether Jeneric/Pentron Will Suffer Irreparable Harm Absent an Injunction

The Federal Circuit has held that "[i]n matters involving patent rights, irreparable harm has been presumed when a clear showing has been made of patent validity and infringement."

Richardson, 868 F.2d at 1247 (citing Smith Int'l, Inc. v. Hughes Tool Co., 718 F.2d 1573, 1581 (Fed. Cir. 1983)). In addition to arguing that this presumption of irreparable harm should apply here, Jeneric/Pentron further argues that, even without a presumption of irreparable harm, the actual danger of irreparable harm to Jeneric/Pentron is compelling.

Here, a "clear showing" of patent infringement has been made by virtue of the jury's verdict that Defendants' products infringe the asserted claims of the patents in question. In addition, a "clear showing" of patent validity has been made by virtue of, inter alia, the jury's rejection of Defendants' claim that the '366 patent "anticipated" Jeneric/Pentron's patents in question, as well as the Court's recent striking of Defendants' public use defense. As to the latter, the Court emphasized in its ruling that while the imposed sanction obviated the need for a new trial, the new evidence would probably result in a different outcome on the claim of public use. Thus, the Court finds that the presumption of irreparable harm applies.

Furthermore, the Court finds compelling Jeneric/Pentron's

other claims of irreparable harm that would flow from the Court's failure to enter a permanent injunction at this time. For example, there are strong indications that Defendants will be unable to compensate Jeneric/Pentron for any losses incurred. Jeneric/Pentron supports this argument based on Defendants' counsel's own representation that Defendants are "not going to be able to set a bond" should Defendants' desire to stay any injunction entered by the Court. See Transcript, Chambers Conference, March 14, 2003 at 8. Further complicating the recovery of any present and future damages is the fact that Chemicl AG is a foreign company located in the Principality of Liechtenstein.

In their opposition to the entering of a permanent injunction, Defendants do not offer evidence traditionally used to rebut a presumption of irreparable harm. See Polymer Technologies, Inc. v. Bridwel, 103 F.3d 970, 974 (Fed. Cir. 1996) (noting some examples of evidence found sufficient for showing lack of irreparable harm, including "evidence that future infringement was no longer likely, that patentee was willing to forego its right to exclude by licensing patent, or that patentee had delayed in bringing suit"). Rather, as discussed below, Defendants claim, inter alia, that their substantive issues for appeal militate against the Court entering a permanent injunction at this time. Such an argument fails to adequately rebut this

Court's finding of irreparable harm, presumed or not. Thus, the Court finds that Jeneric/Pentron will be irreparably harmed absent an injunction in this case.

2. Whether Jeneric/Pentron Has an Adequate Remedy at Law Concerning Future Infringement

Future infringement, as noted by the Federal Circuit, "may have market effects never fully compensable in money." Reebok Int'l Ltd. v. J. Baker, Inc., 32 F.3d 1552, 1557 (Fed. Cir. 1994) (citing Hybritech Inc. v. Abbott Laboratories, 849 F.2d 1446, 1457 (Fed. Cir. 1988)). Even assuming compensability, it is unclear whether Defendants could adequately compensate Jeneric/Pentron for any injury it incurs. Thus, this factor weighs in favor of granting a permanent injunction at this time.

3. Whether the Public Interest Favors Injunctive Relief

The Federal Circuit stresses that "the focus of the district court's public interest analysis should be whether there exists some critical public interest that would be injured by the grant of preliminary relief." Hybritech, 849 F.2d at 1458. Here, Jeneric/Pentron argues that "there is no public interest, much less a 'critical' public interest, which would be served by denying Jeneric/Pentron's Motion for Permanent Injunction."

Plaintiff's Reply at 7.

Contrary to Defendants' claim that Jeneric/Pentron is not practicing the invention, see Defendants' Opposition at 3 (arguing that "the consumer would lose because of Jeneric's

inability to supply a product equivalent to that which would be enjoined", the record reveals that Jeneric/Pentron does sell products which are covered by the patents-in-suit. See Plaintiff's Reply at 7 (referring to Plaintiff's Answers to Defendants' First Set of Interrogatories, which attest that its products "Avante" and "Synspar Softspar" are covered by the patents-in-suit).

In light of Jeneric/Pentron's apparent ability to supply the market that might otherwise be frustrated by the Court's issuance of an injunction, the Court finds that there is no public interest that would be injured by the grant of injunctive relief. Moreover, the Court recognizes the general principle that "there exists a public interest in protecting rights secured by valid patents." Hybritech, 849 F.2d at 1458. Thus, the Court concludes that this factor weighs in favor of granting a permanent injunction at this time.

4. Defendants' Substantive Issues for Appeal

In their opposition, Defendants argue that Jeneric/Pentron's motion for a permanent injunction should be denied because, inter alia, Defendants have a number of substantive issues for appeal. See Defendants' Opposition at 3-7. In their reply, Jeneric/Pentron contend that Defendants' argument is not relevant to the Court's consideration of whether a permanent injunction should be granted. See Plaintiff's Reply at 8-9.

- Defendants cite no authority indicating that this Court, when addressing a motion to permanently enjoin, should consider the quality of Defendants' appellate issues. Indeed, the Court finds no such authority. In considering whether to grant a stay of an injunction, pending appeal, the Federal Circuit commands that trial courts consider the traditional stay factors, including whether the stay applicant has made a strong showing that he is likely to succeed on the merits. See Standard Havens Prod. v. Gencor Indus., 897 F.2d 511, 512 (Fed. Cir. 1990). Should the Court, when considering whether to grant a permanent injunction in the first instance, assess whether Defendants have made a strong showing that they are likely to succeed on the merits, the result would be to collapse two distinct analytical standards into one.

Regardless, however, of whether it is appropriate at this time for the Court to consider Defendants' claims of substantive issues for appeal, the Court nonetheless finds that Defendants' fail to demonstrate the requisite "strong showing" of a likelihood of success on appeal.

5. Due Process Concerns

Defendants also claim that the combination of the sanction imposed against Defendants as a result of their discovery misconduct (to wit, striking their public use defense), in combination with an injunction that is enforceable against non-

parties, i.e., against "those who might have purchased the [infringing] product abroad," raises due process concerns.

Defendants' Opposition at 8. Such concerns are misplaced, however, and do not cut against the issuance of an injunction.

First, it is of little consequence that it was Defendants' discovery misconduct that changed the outcome of this litigation.

As discussed, the Court finds a clear showing of infringement and patent validity. That the Court's earlier ruling removed the need for a new trial on public use should not be held against Jeneric/Pentron, particularly in light of the Court's conclusions that the new evidence would probably have changed the outcome of any new trial.

Second, any injunctive order would apply only to Defendants and those non-parties "in active concert or participation with them who receive actual notice of the order . . ." FED. R. CIV. P. 65(d). Thus, Defendants' warning that any injunction would "punish the innocent" is unfounded at this point.

6. Whether the Balance of Hardships Favors an Injunction

As discussed above, the Court finds that Jeneric/Pentron will suffer irreparable harm if an injunction is not issued at this time, that an adequate remedy at law concerning future infringement is not available, that the public interest favors the issuance of an injunction, that Defendants' claim of substantive issues for appeal is misplaced, and that Defendants'

due process concerns are meritless.

While the Court acknowledges that the issuance of the permanent injunction carries with it significant consequences, such are the consequences that follow from infringing actions.

See Windsurfing Int'l, Inc. v. AMF, Inc., 782 F.2d 995, 1003 n. 12 (Fed. Cir.) (noting that "one who elects to build a business on a product found to infringe" cannot object to an injunction).

In conclusion, the Court finds that the equities of this case support the imposition of a permanent injunction.

IV. FORM AND SCOPE OF PERMANENT INJUNCTION

The requirements for a valid injunction are found in Rule 65(d) of the Federal Rules of Civil Procedure, which provides:

Every order granting an injunction and every restraining order shall set forth the reasons for its issuance; shall be specific in terms; shall describe in reasonable detail, and not by reference to the complaint or other document, the act or acts sought to be restrained; and is binding only upon the parties to the action, their officers, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them who receive actual notice of the order by personal service or otherwise.

FED. R. CIV. P. RULE 65(d). As the Supreme Court has noted, "[t]he Rule was designed to prevent uncertainty and confusion on the part of those faced with injunctive orders, and to avoid the possible founding of a contempt citation on a decree too vague to be understood." Schmidt v. Lessard, 414 U.S. 473, 476 (1974). Thus, any such order must "provide plaintiffs with the appropriate level of protection while still placing defendants on

notice of the prohibited conduct." See American Can Co. v. Mansukhani, 742 F.2d 314, 333 (7th Cir. 1984).

The Court has considered Jeneric/Pentron's Proposed Permanent Injunction ("Proposed Injunction"), which it attached to its Motion for Permanent Injunction [Doc. No. 207; Exhibit A]. Defendants raise objections to the form and scope of the Proposed Injunction.

First, Defendants contest the inclusion of LF-PFM, LF-1-PFM, CPC-LF, Sensation, Cerpress and Authentic in the Proposed Injunction. Defendants claim that the jury in this matter returned a verdict holding that only Sensation and Cerpress infringe; thus, the other products should not be included in an injunction.

As Defendants themselves acknowledge, the Federal Circuit permits injunctive decrees prohibiting those devices that have been adjudged to infringe and "colorable" variations thereof. See KSM Fastening Systems v. H.A. Jones Co., 776 F.2d 1522, 1526 (Fed. Cir. 1985). Defendants have attested to the fact that LF-PFM, LF-1-PFM and Sensation are the same product, and that CPC-LF and Cerpress are the same product. Thus, in light of the jury's verdict holding that Sensation and Cerpress were infringing products, it is appropriate to include LF-PFM, LF-1-PFM and CPC-LF within the scope of "colorable variations" of the infringing products.

- As to whether Authentic appropriately falls within the scope of a "colorable variation" of LF-1-PFM, the Court is unable to draw such a conclusion based on the present record.

Jeneric/Pentron contends that, based on Chemical AG's earlier response to Jeneric/Pentron's request for documents pertaining to Authentic, Authentic should be included within the scope of "colorable variations" of the infringing products.¹ Defendants, however, argue that Authentic was never their product and that they do not know what the German trademark-holding company of Authentic does with the product after it buys product (presumably, LF-1-PFM) from Chemical AG. See Transcript, Chambers Conference, March 14, 2003 at 24, 26; Defendants' Reply Memorandum in Support of its Motion for Entry of Judgment at 11. There is nothing in the record upon which the Court might appropriately base a decision to include Authentic within the scope of the permanent injunction. Thus, based on the inadequate record before the Court concerning the composition of Authentic, the Court finds it inappropriate to include Authentic within the scope of "colorable variations" of the infringing products.

Second, Defendants claim that the second paragraph of the

¹ In their Response to Request No. 4 of Jeneric/Pentron's First Set of Requests for Production of Documents to Defendant Chemical AG, Defendants indicate that documents in connection with the trade name "Authentic" "have already been produced in this litigation with respect to LF-1-PFM." Responses to Jeneric's First Set of Requests for Production of Documents to Defendant Chemical AG, April 12, 2002.

Proposed Injunction is too broad in that it "does not specifically identify the scope of the mentioned claims," merely "contains the overly-broad prohibition against 'infringement' (i.e., 'product which infringes'), and, further, violates the mandate in Rule 65(d) that the terms of an injunction must not refer to 'the complaint or other document' of [sic] the acts sought to be restrained." Defendants' Opposition at 10-11.

The Court finds that the use of the word "infringement" is not overly broad in light of Federal Circuit precedent and the detailed record that exists in this case. See Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352, 1359 (Fed. Cir. 1999) (finding that order establishing "permanent injunction against [Signtech] for any further infringement" of patent-in-suit satisfies Rule 65(d) requirements in light of "detailed record on which this injunction was entered").

Next, Defendants object to the third paragraph of the Proposed Injunction, which seeks to prohibit three forms of infringement: direct, contributory, and actively inducing. Defendants contend that because Jeneric/Pentron "tried this case on the theory that Defendants directly infringed," Jeneric/Pentron thereby "waived any theory that they contributorily infringed or actively induced infringement." Defendants' Opposition at 11.

As Jeneric/Pentron points out, "35 U.S.C. § 271 expressly

prohibits patent infringement whether it be direct infringement, inducement to infringe, and/or contributory infringement."

Plaintiff's Reply at 12. The Court knows of no reason why it should distinguish among the different forms of infringement covered by the statute. The focus of the injunction is to protect against future infringement, no matter how it is manifested. Absent authority--Defendants' cite none--to distinguish among the three acts of infringement based simply on the plaintiff's trial theory, the Court rejects Defendants' objection.

Next, Defendants argue that the Proposed Injunction fails to adequately address Chemicl AG's activity in Europe. Specifically, Defendants voice concern that the proposed injunction leaves them vulnerable to allegations of contempt should Chemicl AG validly and properly sell LF-PFM or LF-1-PFM to various customers in Europe, who then subsequently import such products into the United States. See Defendants' Opposition at 12. Defendants suggest that, perhaps, "it may well be that if Chemicl AG sells product in Europe, that the sale of such product should bear appropriate notations, such as 'not to be imported into the United States' or the like." Id. at 13 (citing Spindelfabrik Suessen-Schurr v. Schubert & Salzer, 903 F.2d 1568, 1578 (Fed. Cir. 1990)).

The Court finds that including such language in the

injunction is unwarranted at this time. The trial court in Spindelfabrik included detailed language similar to that suggested by Defendants in response to repeated violations of the original injunction. No such circumstance exists here. See Additive Controls & Measurement Sys., Inc. v. Flowdata, Inc., 154 F.3d 1345, 1356 (Fed. Cir. 1998) (holding that "broad injunctions [similar to that used in Spindelfabrik] should be used only in exceptional cases," such as when "[t]he district court considered the broad injunction to be necessary in light of the repeated past violations of the original injunction"). Here, the Proposed Injunction expressly commands that:

Defendants and any other persons in active concert or participation with them who receive actual notice of this order by personal service or otherwise, shall be permanently enjoined from importing into the United States, or making, using, selling or offering to sell within the United States, [infringing products].

Proposed Injunction ¶ 2. See also id. ¶ 1. The Court finds that this language adequately addresses Chemicl AG's activity in Europe. See generally Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518, 526 (1972) ("[I]f Deepsouth's conduct were intended to lead to use of patented deveiners inside the United States its production . . . activity would be . . . an induced or contributory infringement.").

Lastly, Defendants stress their right to "'design around' the claims of a patent," i.e., that "Chemicl AG may possibly wish to experiment with use of fluxes other than barium oxide, baron

oxide and sodium oxide." Defendants' Opposition at 13.

Accordingly, Defendants seek a "bright-line test of the scope of the injunctive decree so that Chemcl may ensure its actions fully comply." Id. at 14.

As held by the Federal Circuit,

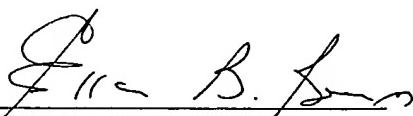
[a]n enjoined party is entitled to design around the claims of a patent without the threat of contempt proceedings with respect to every modified device although he bears the risk that the enjoining court may find changes to be too insubstantial to avoid contempt.

KSM Fastening, 776 F.2d at 1526. The Court believes that the language of the Proposed Injunction, along with the detailed record on which any injunction will be entered, provides sufficient notice as to the scope of what activity is being enjoined.

CONCLUSION

Having determined that a permanent injunction is warranted in this case, this Court hereby GRANTS Jeneric/Pentron's motion for a permanent injunction [Doc. No. 207].

SO ORDERED.


ELLEN BREE BURNS
SENIOR DISTRICT JUDGE

Dated at New Haven, Connecticut, this 15 day of April, 2003.

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